From: Sent:

Chan, Christina

To: Subject: Thursday, May 08, 2003 3:00 PM Yu, Misook, STIC-Biotech/ChemLib

RE: 09/851422 == erroneous file processed

Please rush. Thanks Chris

Chris Chan TC 1600 New Hire Training Coordinator and SPE 1644 308-3973 CM-1, 9B19

> ----Original Message--From: Yu. Misook

Sent: Thursday, May 08, 2003 2:56 PM To: Chan, Christina

Subject:

FW: 09/851422 == erroneous file processed

The case is 8 month amended and previous search was improperly done. Please approve rush search for SEQ ID NO:1, 2, and 8.

Examiner Misook Yu, Ph.D. 703-308-2454 (Phone) ArtkUnit-1642 CM1-8E18 (Room) CM1-8E12 (Mail Box)

----Original Message----

From: Corrigan, Anne-Marie

Sent: / Thursday, May 08, 2003 1:40 PM

Yu, Misook Mosher, Mary Cc:

Subject: 09/851422 == erroneous file processed

Unfortunately, STIC processed the wrong file under the above serial number (listed in search system as US09851422B). I removed the erroneous files from the search system; now, the files corresponding to the "ENTERED" raw sequence listing (09/851422A) in your file wrapper can be searched. If you'd like, I'd be happy to contact the searcher who produced your search.

I apologize for the error.

Point of Contact: Thomas G. Larson, Ph.D. 703-308-7309 CM1, Rm. 6 B 01

Searcher:
Phone:
Location:
Date Picked Up: 5/8,
Date Completed: 5/12
Searcher Prep/Review:
Clerical:
Online time:

TYPE OF SEARCH:
NA Sequences:
AA Sequences: 3
Structures:
Bibliographic:
Litigation:
Full text:
Patent Family:
Other:

VENDOR/COST (where applic.)
STN:
DIALOG:
Questel/Orbit:
DRLink:
Lexis/Nexis:
Sequence Sys.:
WWW/Internet:
Other (specify):
- · · · · · · · · · · · · · · · · · · ·

THIS PAGE BLANK (USPTO)

Copyright

GenCore version 5.1.4_p5_4578 (c) 1993 - 2003 Compugen Ltd.

```
Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A_Geneseq_101002:*
1: /SIDS2/gcgdata/ge
2: /SIDS2/gcgdata/ge
3: /SIDS2/gcgdata/ge
                                                                                                                                                                                    5:
5:
6:
7:
7:
110:
113:
115:
116:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-851-422A-1
138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             908470 seqs, 133250620 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  May 9, 2003, 16:07:45; Search time 52.2353 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GFIATLCTKXXXXVLDFGIDKXXXXLIQLIEDKXXXX 37
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA1989.DAT: *
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA1990.DAT: *
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA1990.DAT: *
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA1992.DAT: *
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA1992.DAT: *
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA1993.DAT: *
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA1994.DAT: *
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA1995.DAT: *
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA1996.DAT: *
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA1997.DAT: *
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA1999.DAT: *
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA1999.DAT: *
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA2000.DAT: *
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA2000.DAT: *
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA2000.DAT: *
/SIDSZ/gcgdata/geneseq/geneseqp-emb1/AA2000.DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1980.
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1981.
                                                                                                                                                                                                                                                                                                                                                                                                               /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1987.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1988.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1985.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1986.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1982.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1984.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (without alignments)
94.386 Million cell updates/sec
```

Pred. No. is the n score greater than and is derived by is the number of results predicted by chance to have a ater than or equal to the score of the result being printed, rived by analysis of the total score distribution.

×

Result No.	Score	Query Match Length DB	Length	: BB	ID	Description
1	102	73.9	25	23	AA021730	Amoebapore helix
N	102	73.9	25	23	AAO21739	Procytotoxin cyt
ω	102	73.9	25	23	AAE18192	Entamoeba histol
4	102	73.9	25	23	AAE18197	Procytotoxin #1
ر ت	102	73.9	26	23	AA021737	· Procytotoxin cyt
ō	102	73.9	26	23	AA021738	Procytotoxin cyt
7	102	73.9	26	23	AAE18200	Protoxin #1 for
æ	102	73.9	27	23	AA021736	Procytotoxin cyt
9	102	73.9	27	23	AAE18199	Procytotoxin #3
10	101.5	73.6	27	23	AAE18201	Protoxin #2 for tr

A new procytotoxin useful in the treatment of cancer of e.g. prostate, ovary, breast, or skin, has a cytotoxic peptide bound to an inactivator via a peptide bond cleavable by a specific protease .

WPI; 2002-507251/54.

Wagner TE;

(YUXX/) YU X. (WAGN/) WAGNER T E.

45	44	43	42																	25			22		20	19	18	17	16	15	14	13	12	11
42	42	42	42	42	42	42				42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	43	43	43	44	44	44	7.	97.5	7.	7.
30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	31.2	•	•	•	31.9	•	70.7	70.7		70.7
893	893	893	893	893	893	893	893	893	893	893	893	893	893	893	893	893	893	893	893	893	893	893	893	893	626	617	431	600	493	463	26	26	24	24
19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	22	22						23		23
AAW83998	AAW83997 .	AAW83996	AAW83995	AAWB3994	AAW83993	AAW83992	AAW83991	AAW83990	AAW83989	AAW84011 ·	AAW84006	AAW84005	AAW83979	AAW83978	AAW83988	AAW83987	AAW83986	œ	AAW83984	AAW83983	œ	œ	AAW83980	AAW83973	ABG22683	ABG22682	AAB56095	AAG41751	AAG41752	75	AAE18205	AAE18204	82	AAO21741
Tne DNA polymerase	DNA	Tne DNA polymerase	DNA polymeras	DNA	Tne DNA polymerase	Tne DNA polymerase	DNA polymeras	Tne DNA polymerase	DNA polymeras	DNA	DNA polymeras	DNA	DNA	DNA	NA pol	l human	human dia	c		thal	thal	#5 f	4	pti	Procytotoxin cytol									

ALIGNMENTS

```
AAO21730
ID AAO2
RESULT 1
                                                                                                                                                      Entamoeba histolytica.
                                                                                                                                                                      Cytotoxic; cytostatic; procytotoxin; inactivator; protease; cancer; ovary; prostate; breast; skin; lung; pancreas; Amoebapore helix 3.
                                                                                                                                                                                                               13-SEP-2002 (first entry)
                                                                                        09-MAY-2001; 2001US-0851422
                                                                                                      27-AUG-2001; 2001US-0938623
                                                                                                                                        US2002045736-A1
                                                                                                                                                                                                                                AA021730;
                                                                                                                                                                                                                                                 AAO21730 standard; Peptide; 25
                                                                                                                        18-APR-2002.
                                                                                                                                                                                               Amoebapore helix 3 cytolytic peptide
                                                                                                                                                                                                                                                 8
```

```
RESULT 2
AAO21739
     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to a procytotóxin comprising a cytotoxic peptide bound to an inactivator via a peptide bond, where the peptide bond is susceptible to cleavage by a targeting specific protease. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, breast, skin, lung or pancreas. This sequence represents the Amoebapore helix 3 cytolytic peptide relating to the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cytotoxic; cytostatic; procytotoxin; inactivator; protease; cancer; ovary; prostate; breast; skin; lung; pancreas; cytolytic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Procytotoxin cytolytic peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA021739;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAO21739 standard; Peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Page
                                                                                      Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GFIATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GFIATLCTK----VLDFGIDK----LIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . Similarity
25; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                       independently selected from the group consisting of the epsilon-amino group of the adjacent lysine residue, [epsilon-gamma]-Glu, [epsilon-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu)-[alpha-gamma]-Glu)-[alpha-gamma]-Glu)-[alpha-gamma]-Glu)-[alpha-gamma]-[alpha]-[alpha]-[alpha]-[alpha]-[alpha]-[alpha]-[alpha]-[alpha]-[alpha]-[alpha]-[alpha]-[alpha]-[alpha]-[alpha]-[alpha-gamma] represents a peptide bond between the epsilon-adjacent glutamate, [alpha-gamma] represents a peptide bond between the alpha amino group of the first glutamate and the gamma carboxyl group of the second glutamate, [epsilon-alpha] represents a peptide bond between the alpha acid of lysine and the alpha carboxyl group of the second glutamate, [epsilon amino acid of lysine and the alpha carboxyl group of the indicated amino acid."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note= "This Lys residue is modified by R, where R is independently selected from the group consisting of the epsilon-amino group of the adjacent lysine residue, [epsilon-gamma]-Glu, [epsilon-gamma]-Glu [alpha-gamma]-Glu, [epsilon-alpha]-(Phe)1-3, [epsilon-alpha]-(Phe)1-3, [epsilon-alpha]-(Phe)1-3, [epsilon-alpha]-(Trp)1-3, [epsilon-alpha]-(Arg)1-3, wherein [epsilon-alpha]-(Arg)1-3, wherein [epsilon-alpha]-(Arg)1-3, wherein [epsilon-alpha]-(Arg)1-3, wherein [epsilon-alpha]-(Arg)1-3, [epsilon-alpha]-(Arg)1-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ų.
/note= "This Lys residue is modified by R, where R
independently selected from the group consisting of
epsilon-amino group of the adjacent lysine residue,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note= "This Lys residue is modified by R, where
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      73.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 102; DB 23;
Pred. No. 5.5e-12;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cytotoxic peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R is
```

```
RESULT 3
AAE18192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to a procytotoxin comprising a cytotoxic pept bound to an inactivator via a peptide bond, where the peptide bond susceptible to cleavage by a targeting specific protesse. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, breast, skin, lung or pancreas. This sequence represents a procytotoxin cytolytic peptide sequence relating to the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A new procytotoxin useful in the treatment of cancer of e.g. prostate, ovary, breast, or skin, has a cytotoxic peptide bound to an inactivate via a peptide bond cleavable by a specific protease \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; Page 7; 21pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       09-MAY-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-AUG-2001; 2001US-0938623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US2002045736-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07-MAY-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAE18192 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (YUXX/) YU X.
(WAGN/) WAGNER T
                                                                                                                                                                    Entamoeba histolytica
                                                                                                                                                                                                                                                          prostate;
                                                                                                                                                                                                                                                                                                        Procytotoxin;
                                                                                                                                                                                                                                                                                                                                                                                     Entamoeba histolytica procytotoxin, amoebapore helix 3.
15-NOV-2001
                                                                                  √O200185777-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
mes 25; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GFIATLCTK----VLDFGIDK----LIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GFIATLCTKXXXXVLDFGIDKXXXXXLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2002-507251/54
                                                                                                                                                                                                                                                 xin; cytotoxic peptide; epsilon-amino group;
ovary; lung; skin; channel-forming peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           [epsilon-gamma]-Glu, [epsilon-gamma]-Glu-[alpha-gamma]-Glu)1-3, [epsilon-alpha]-(Trp)1-3, [epsil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001US-0851422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      73.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 102;
Pred. No. 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 23;
5.5e-12;
les 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cytotoxic peptide e peptide bond is
                                                                                                                                                                                                                                                               apoptosis;
                                                                                                                                                                                                                                                                                                        cancer; cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ν
```

AC XXX DAY XXX AC XXX A

09-MAY-2001; 2001WO-US40690

밁 á

```
RESULT 4
AAE18197
      맔
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yu X,
                                                                                                                                                                                                                                                                                                                                                                         Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                       prostate;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAE18197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAE18197 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-MAY-2000;
16-JUN-2000;
                                                   Modified-site
                                                                                                                                                                                                                                                                                                                            Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             procytotoxín, amoebapore helix
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             peptide,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsilon-amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ovary, lung or skin. Cytolytic peptide also known as channel-forming peptide, typically disrupt cell membrane, causing cell lysis and death (apoptosis) upon contact. The present sequence is Entamoeba histolytica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (GREE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Loca!
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ц
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GFIATLCTK----VLDFGIDK----LIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GFIATLCTKXXXXVLDFGIDKXXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2002-154423/20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wagner TE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            lung or skin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GREENVILLE
                                                                                                                                                                                                                                                                                                                                                                                                       ovary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Page 7;
                                                        /note- "Lys(R), where R is the unmodified epsilon-amino group of the adjacent Lys, or is (epsilon-gamma]-Glu, [epsilon-gamma]-Glu, [epsilon-alpha]-(Phe)]-3, [epsilon-alpha]-(Tyr)]-3, [epsilon-alpha]-(Tyr)]-3, [epsilon-alpha]-(Tyr)]-3, [epsilon-alpha]-(Lys)]-3 or [epsilon-alpha]-(Arg)]-3; where [epsilon-gamma] represents a peptide bond between the epsilon amino group of lysine and the gamma carboxyl group of the adjacent glutamate, [alpha-gamma] represents a peptide bond between the alpha amino group of the first glutamate, and the gamma carboxyl group of the first glutamate, [epsilon-alpha] represents a peptide bond between the epsilon amino acid of lysine and the alpha carboxyl group of the indicated amino acid, and 1-3 indicates that 1,2 or 3 of the designated amino acid can be linked to the first via conventional peptide bonds"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000US-203063P
2000US-212042P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                     #
₩
                                                                                                                                                                                                                                                                                                                                                                                                   cytotoxic peptide; epsilon-amino group; cancer; cytostatic;
ry; lung; skin; channel-forming peptide; apoptosis; therapy,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                       for
                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
group of the adjacent Lys, or is [epsilon-gamma]-Glu,
[epsilon-gamma]-Glu-[alpha-gamma]-(Glu)1-3,
                                                     the first via
17
                                 /note* "Lys(R), where R is the unmodified epsilon-amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HOSPITAL SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    33pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    treating cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             73.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 102; DB 23;
Pred. No. 5.5e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
```

Qγ 밁

1 GFIATLCTKXXXXVLDFGIDKXXXXL1QLIEDK 33

2

GFIATLCTK----VLDFGIDK----LIQLIEDK

RESULT

```
Query Match
Best Local
  Matches
                                                                                                                                           The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsian group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, lung or skin. Cytolytic peptide also known as channel-forming peptide, typically disrupt cell membrane, causing cell lysis and death
                                                                                                                                                                                                                                                                                                                                                          A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-MAY-2000;
16-JUN-2000;
                                                                                                                                                                                                                                                                                              Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-MAY-2001; 2001WO-US40690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Modified-site
                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (GREE-) GREENVILLE HOSPITAL SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-NOV-2001.
                                                                                                                       (apoptosis) upon contact. The present sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                2002-154423/20
                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wagner
                   Similarity
                                                                                                                                                                                                                                                                                                Page 23;
                                                                                  25 AA;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note- "Lys(R), where R is the unmodified epsilon-amino group of the adjacent Lys, or is [epsilon-gamma]-Glu, [epsilon-amino-gamma]-Glu, [epsilon-alpha]-Glu, [epsilon-alpha]-(Phe)1-3, [epsilon-alpha]-(Tyr)1-3, [epsilon-alpha]-(Lys)1-3 or [epsilon-alpha]-(Trp)1-3, [epsilon-alpha]-(Lys)1-3 or [epsilon-alpha]-(Tyr)1-3, [epsilon-alpha]-(Lys)1-3 or [epsilon-alpha]-(Tyr)1-3, [epsilon-alpha]-(Lys)1-3 or [epsilon-alpha]-(Trp)1-3, [epsilon-alpha]-(Lys)1-3 or [epsilon-alpha]-(Trp)1-3, [epsilon-alpha]-(Lys)1-3 or [epsilon-alpha]-(Lys)1-3, [epsilon-alpha]-(Lys)1-3 or [epsilon-amino group of the first glutamate, [alpha-gamma] represents a peptide bond between the alpha amino group of the second glutamate, [epsilon-alpha] represents a peptide bond between the epsilon-alpha] represents a peptide bond between the epsilon-alpha] represents a peptide bond between the epsilon-alpha] represents a peptide bond between the epsilon anino acid of lysine and the alpha carboxyl group of the indicated amino acid, and 1-3 indicates that 1,2 or 3 of the designated amino acid can be linked to the first via conventional peptide bonds"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 [epsilon-alpha] (Trp)1-3, [epsilon-alpha] (Lys)1-3 or [epsilon-alpha] (Arg)1-3; where [epsilon-gamma] represents a peptide bond between the epsilon amino group of lysine and the gamma carboxyl group of the adjacent glutamate, [alpha-gamma] represents a peptide bond between the alpha amino group of the first glutamate and the gamma carboxyl group of the second glutamate, [epsilon-alpha] represents a peptide bond between the gamma carboxyl group of the second glutamate, [epsilon-alpha] represents a peptide bond between the epsilon amino acid of lysine and the alpha carboxyl group of the indicated mino acid, and 1-3 indicates that 1,2 or 3 of the designated amino acid card can be linked to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-203063P
2000US-212042P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the first via
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                epsilon-alpha]-(Phe)1-3, (
                                                                                                                                                                                                                                                                                            33pp;
                      73.9%;
                                                                                                                                                                                                                                                                                              English.
                      Pred.
                                       Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   conventional peptide bonds"
Mismatches
                      No.
                      ഗ
                      DB 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          [epsilon-alpha]-(Tyr)1-3,
[epsilon-alpha]-(Lys)1-3 or
0,
                                                                                                                            is
                                       Length
                                                                                                                       procytotoxin.
Indels
80
Gaps
```

```
RESULT 6
AAO21738
   8
                                                                                                                                                                           Ş
                                                                                                                                                                                                 Query Match
Best Local S
Matches 25
                                                                                                                                                                                                                                                                The invention relates to a procytotoxin comprising a cytotoxic peptide bound to an inactivator via a peptide bond, where the peptide bond is susceptible to cleavage by a targeting specific protease. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, breast, skin, lung or pancreas. This sequence represents a procytotoxin cytolytic peptide sequence relating to the invention.
                                                                                                                                                                                                                                                                                                                                                                A new procytotoxin useful in the treatment of cancer of e.g. ovary, breast, or skin, has a cytotoxic peptide bound to an via a peptide bond cleavable by a specific protease -
Cytotoxic; cytostatic; procytotoxin; ovary; prostate; breast; skin; lung;
                                 Procytotoxin cytolytic peptide #3.
                                                                                                AAO21738 standard; Peptide;
                                                                                                                                                                                                                                                                                                                                            Disclosure; Page 7; 21pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2002-507251/54.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09-MAY-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-AUG-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US2002045736-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ovary; prostate;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cytotoxic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Procytotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA021737;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAO21737 standard; Peptide;
                                                       13-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                        (WAGN/) WAGNER T E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (YUXX/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Modified-site
                                                                                                                                                        \vdash
                                                                                                                                                                             GFIATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                        GFIATLCTK---
                                                                                                                                                                                                  l Similarity
25; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                  Wagner TE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ϋ́U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cytostatic;
                                                                                                                                                                                                 73.9%;
illarity 75.8%;
Conservative
                                                                                                                                                                                                                                               26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001US-0938623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cytolytic
                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001US-0851422.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                               A
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /AUTE "The epsilon amino group of Lys to the alpha carboxyl group of Phe"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tatic; procytotoxin;
breast; skin; lung;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bonded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note-
                                                                                                                                                       -VLDFGIDK----LIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "The alpha carboxyl group of Phe is peptide to the epsilon amino group of Lys"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    peptide
                                                                                                   26
                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26
                                                                                                                                                                                                 Score 102; DB 23; Pred. No. 5.7e-12; 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₿
                                                                                                   Ä
 pancreas;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     inactivator; protease;
pancreas; cytolytic.
inactivator; protease;
pancreas; cytolytic.
                                                                                                                                                        25
                                                                                                                                                                                                                       Length
                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      İs
                                                                                                                                                                                                                         26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      peptide bonded
            cancer;
                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                              inactivator
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cancer;
                                                                                                                                                                                                                                                                                                                                                                                      prostate,
                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                  2
```

```
RESULT 7
AAE18200
                                                                                               밁
                                                                                                                                                                                                                                                                                          ş
   FT FT XX
                                                                                                                                                                                                                                                                                                                                                                                         CCCCCXXXPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PX PP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FFFFXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FFFFFXXXX
                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                          Query · Match
                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to a procytotoxin comprising a cytotoxic pept bound to an inactivator via a peptide bond, where the peptide bond susceptible to cleavage by a targeting specific protease. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, breast, skin, lung or pancreas. This sequence represents a procytotoxin cytolytic peptide sequence relating to the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A new procytotoxin useful in the treatment of cancer of e.g. overy, breast, or skin, has a cytotoxic peptide bound to an via a peptide bond cleavable by a specific protease .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Yu X,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (YUXX/)
                                     Key
Modified-site
                                                                        Unidentified
                                                                                               Procytotoxin; cytotoxic peptide; epsilon-amino group; cancer; cytostatic;
prostate; ovary; lung; skin; channel-forming peptide; apoptosis; therapy.
                                                                                                                                  Protoxin #1 for treating cancer
                                                                                                                                                           07-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Page 7; 21pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2002-507251/54.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-MAY-2001; 2001US-0851422
                                                                                                                                                                                                         AAE18200 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-AUG-2001; 2001US-0938623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US2002045736-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wodified-site
                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wagner TE;
                                                                                                                                                                                                                                                                                                                   25; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WAGNER T E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ĭ
                                                                                                                                                                                                                                                                                                                                                                 26
                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
/note= "Lys-[epsilon-alpha]; where [epsilon-alpha]
represents a peptide bond between the epsilon aming
group of lysine and the alpha carboxyl group of th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to the
25
                                     Location/Qualifiers 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note-
                                                                                                                                                                                                         peptide;
                                                                                                                                                                                                                                                                                                                             73.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "The epsilon amino group of Lys is peptide bonded alpha carboxyl group of Phe"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "The alpha carboxyl group of epsilon amino group of Lys"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "The epsilon amino group of Lys alpha carboxyl group of Phe"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         English.
                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                           26
                                                                                                                                                                                                                                                                                                                             Score 102;
Pred. No. 5.
                                                                                                                                                                                                           Ä
                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                              DB 23,
5.7e-12;
0;
                                                                                                                                                                                                                                                                      25
                                                                                                                                                                                                                                                                                           33
                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Phe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          £
                                                                                                                                                                                                                                                                                                                                           26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        is peptide bonded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              inactivator
                                                                                                                                                                                                                                                                                                                   8,
                                                                                                                                                                                                                                                                                                                   Caps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bonded
                                                                                                                                                                                                                                                                                                                   2
```

ween the epsilon amino carboxyl group of the

```
QΥ
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsilon-amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, lung or skin. Cytolytic peptide also known as channel-forming peptide, typically disrupt cell membrane, causing cell lysis and death (apoptosis) upon contact. The present sequence is protoxin.
                                                                                                                                                                                                                         Cytotoxic; cytostatic; procytotoxin; inactivator; protease; cancer; ovary; prostate; breast; skin; lung; pancreas; cytolytic.
                                                                                                                                                                                                                                                                                                                                            AAO21736 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2002-154423/20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Υu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09-MAY-2000;
16-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-MAY-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200185777-A2
           US2002045736-A1
                                                                                                                         Modified-site
                                                                                                                                                                                                   Unidentified
                                                                                                                                                                                                                                                                                           13-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (GREE-) GREENVILLE HOSPITAL SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-NOV-2001.
                                                           Modified-site
                                                                                                                                                              Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                          \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                  ۲
                                                                                                                                                                                                                                                                                                                                                                                                                      GFIATLCTKXXXXVLDFGIDKXXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                          GFIATLCTK----VLDFGIDK----LIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wagner TE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Page 12; 33pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2001WO-US40690
                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000US-203063P
2000US-212042P
                                                                                                                                                                                                                                                               cytolytic peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Α,
                                                          bonded to the epsilon amino group
group of this Glu is peptide bonde
group of another Glu"
27
                                                                                                                                                             Location/Qualifiers 25
                                                                                                                        to the gamma carboxyl group 26
                                                                                            ל6
|note= "The gamma carboxyl group of this Glu is peptide/
מחלים לאם באינורת amino group of Lys. The alpha amin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        adjacent phenylalanine"
                                                                                                                                                 /note-
                                              'note-
                                                                                                                                                                                                                                                                                                                                            Peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      73.9%;
75.8%;
                                                                                                                                    "The epsilon amino group of Lys gamma carboxyl group of Glu"
                                 "The gamma carboxyl group of this Glu is peptide to the alpha amino group of another Glu"
                                                                                                                                                                                                                                                                                                                                            27
                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 102; DB 23;
Pred. No. 5.7e-12;
                                                                                                                                                                                                                                                                                                                                            Ä
                                                                                                                                                                                                                                                                  #1
                                                                                  group of Lys. The bonded to the gam
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26;
                                                                                                                                                peptide
                                                                                  gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                   carboxyl
                                                                                                                                                 bonded
                                                                                                amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
```

```
RESULT 9
AAE18199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to a procytotoxin comprising a cytotoxic peptide bound to an inactivator via a peptide bond, where the peptide bond is susceptible to cleavage by a targeting specific protease. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, breast, skin, lung or pancreas. This sequence represents a procytotoxin cytolytic peptide sequence relating to the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A new procytotoxin useful in the treatment of cancer of e ovary, breast, or skin, has a cytotoxic peptide bound to via a peptide bond cleavable by a specific protease -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure; Page 7; 21pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-MAY-2001; 2001US-0851422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-APR-2002
                                                                                                                                                                                                                                                            Unidentified
                                                                                                                                                                                                                                                                                                                                             07-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                           AAE18199 standard;
                                                                                                                                                               Modified-site
                                                                                                                                                                                                                                                                                  prostate;
                                                                                                                                                                                                                                                                                               Procytotoxin;
                                                                                                                                                                                                                                                                                                                                                                   AAE18199
                                                                                          WO200185777-A2
                                                                                                                                                                                                                         Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                               GFIATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2002-507251/54
                                                                                                                                                                                                                                                                                                                                                                                                                                                   GFIATLCTK----VLDFGIDK----LIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wagner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ΥU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WAGNER T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                      <del>#</del>
                                                                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2001US-0938623
                                                                                                                                                                                                                                                                                cytotoxic peptide; epsilon-amino group;
ry; lung; skin; channel-forming peptide;
                                                                                                                                                           /note= "Lys-[epsilon-gamma]; where [epsilon-gamma]
represents a peptide bond between the epsilon aming
group of lysine and the gamma carboxyl group of the
adjacent glutamate"
                                                                                                               /note= "Glu-[alpha-gamma]; where [alpha-gamma] represents represents a peptide bond between the amino group of the first glutamate and the gamma group of the second glutamate"
                                                                                                                                                                                                                                                                                                                      for
                                                                                                                                                                                                                       Location/Qualifiers 25
                                                                                                                                                                                                                                                                                                                                                                                         peptide;
                                                                                                                                                                                                                                                                                                                                            entry)
                                                                                                                                                                                                                                                                                                                     treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            73.9%;
75.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     English.
                                                                                                                                                                                                                                                                                                                                                                                           27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 102; L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                      cancer.
                                                                                                                                                                                                                                                                                                                                                                                           A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 23;
.9e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                cancer; cytostatic;
apoptosis; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      e.g. prostate,
o an inactivator
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                         alpha
                                                                                                                             carboxyl
```

09-MAY-2000; 09-MAY-2001;

2000US-203063P 2000US-212042P

2001WO-US40690

```
RESULT 10
AAE18201
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                 09-MAY-2000;
16-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsilon-amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, lung or skin. Cytolytic peptide also known as channel-forming peptide, typically disrupt cell membrane, causing cell lysis and death (apoptosis) upon contact. The present sequence is procytotoxin.
                                                                                                         09-MAY-2001;
                                                                                                                                                                                                                                                                                                                                                                       Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                           Protoxin #2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAE18201 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Page 11; 33pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yu X,
           Yu X,
                                                                                                                                                               WO200185777-A2
                                                                                                                                                                                                                                              Modified-site
                                      (GREE-) GREENVILLE
                                                                                                                                                                                                                                                                                                                                 Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (GREE-) GREENVILLE HOSPITAL SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GFIATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GFIATLCTK----VLDFGIDK----LIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2002-154423/20
           Wagner TE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . Similarity
25; Conser
                                                                                                                                                                                                                                                                                                                                                                                                 ovary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27
                                                                                                                                                                                                                                                                                                                                                                                                                                        for treating cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                2000US-203063P
2000US-212042P
                                                                                                         2001WO-US40690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                             cytotoxic peptide; epsilon-amino group; cancer; cytostatic; ry; lung; skin; channel-forming peptide; apoptosis; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA,
                                                                                                                                                                                      represents a peptide bond between the epsilon amino group of lysine and the alpha carboxyl group of the adjacent phenylalanine"
                                                                                                                                                                                                                                                                   /note= "Lys([epsilon-alpha]-Phe); where [epsilon-alpha] represents a peptide bond between the epsilon amino group of lysine and the alpha carboxyl group of phenylalanine, and a standard peptide linkage between
                                                                                                                                                                                                                                                                                                                              Location/Qualifiers 17..18
                                                                                                                                                                                                                              /note= "Lys-[epsilon-alpha]; where [epsilon-alpha]
                                                                                                                                                                                                                                                           ysine and phenylalanine"
                                      HOSPITAL SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 102;
Pred. No. 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 25,
5.9e-12;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ŋ
```

```
RESULT 11
AAO21741
X P X S X X X X E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                     The invention relates to a procytotoxin comprising a cytotoxic pept bound to an inactivator via a peptide bond, where the peptide bond susceptible to cleavage by a targeting specific protease. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, breast, skin, lung or pancreas. This sequence represents a
                                                                                                                                                          A new procytotoxin useful in the treatment of cancer of e.g. ovary, breast, or skin, has a cytotoxic peptide bound to an ivia a peptide bond cleavable by a specific protease .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the egsilon-amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, lung or skin. Cytolytic peptide also known as channel-forming peptide, typically disrupt cell membrane, causing cell lysis and death (apoptosis) upon contact. The present sequence is protoxin.
                          procytotoxin cytolytic peptide
                                                                                                                                 Example 1; Page 10; 21pp;
                                                                                                                                                                                                                        WPI; 2002-507251/54.
                                                                                                                                                                                                                                                                                                                               09-MAY-2001; 2001US-0851422
                                                                                                                                                                                                                                                                                                                                                                                                                      US2002045736-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ovary; prostate;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cytotoxic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Procytotoxin cytolytic peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA021741;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AA021741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Page 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI;
                                                                                                                                                                                                                                                                                                                                                           27-AUG-2001; 2001US-0938623
                                                                                                                                                                                                                                                                                                                                                                                          18-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                                                                                                                                                                                                                                                                                  (WAGN/) WAGNER T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GFIATLCTKXXXXVLDFGIDKXXXXLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GFIATLCTK----VLDFGIDK---FLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2002-154423/20
                                                                                                                                                                                                                                                    Wagner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   L Similarity
25; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tatic; procytotoxin;
breast; skin; lung;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  73.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               33pp; English.
                                                                                                                               English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 101.5;
Pred. No. 7.4e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                          sequence relating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                inactivator; protease; cancer;
pancreas; cytolytic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /.4e-12;
1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ĎΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23;
                            to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                  peptide bond is
                            invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27;
                                                                                                                                                                              inactivator
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
```

2

24

```
AAE18203
ID AAE1
XX AAE1
XX Proc
XX Pr
RESULT 13
AAE18204
ID AAE18
XX
AC AAE18
XX
DT 07-MA
                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                     δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsilon-amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, lung or skin. Cytolytic peptide also known as channel-forming peptide, typically disrupt cell membrane, causing cell lysis and death (apoptosis) upon contact. The present sequence is cytolytic peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       09-MAY-2000;
16-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Procytotoxin; cytotoxic peptide; epsilon-amino group; cancer; cytostatic;
prostate; ovary; lung; skin; channel-forming peptide; apoptosis; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cytolytic
                          07-MAY-2002
                                                                             AAE18204;
                                                                                                                             AAE18204 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GREE-) GREENVILLE HOSPITAL SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09-MAY-2001; 2001WO-US40690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200185777-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAE18203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAE18203 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-NOV-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12
                                                                                                                                                                                                                                                          \vdash
                                                                                                                                                                                                                                                                             1 GFIATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GFIATLCTKXXXXVLDFGIDKXXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                       GFIATLCTK----VLDFGIDK-----IQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GFIATLCTK----VLDFGIDK----IQLIEDK 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1; Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                             24 AA;
                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-203063P
2000US-212042P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          peptide;
                                                                                                                          peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     33pp;
                                                                                                                                                                                                                                                                                                                                                                               70.7%;
72.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     70.7%;
72.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  treating cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                             26
                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 97.5; DB 23; Pred. No. 3.7e-11;
                                                                                                                                                                                                                                                                                                                                                       Score 97.5; DB 23; Pred. No. 3.7e-11; 0; Mismatches 0;
                                                                                                                             æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                       24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                             24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24;
                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ٥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2
                                                                                                                                                                                                                                                                                                                                                       2
```

```
RESULT 14
AAE18205
    ρR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 24; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsilon-amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, lung or skin. Cytolytic peptide also known as channel-forming peptide, typically disrupt cell membrane, causing cell lysis and death (apoptosis) upon contact. The present sequence is procytolytic peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                           Key
Modified-site
                                                                                                            Procytotoxin;
                                                                                                                                                                 07-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2002-154423/20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      prostate; ovary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Procytotoxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Procytolytic peptide for treating cancer
                                                                                              prostate; ovary;
                                                                                                                                      Procytotoxin #5
                                                                                                                                                                                                                      AAE18205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 1; Page 20; 33pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (GREE-) GREENVILLE HOSPITAL SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15-NOV-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200185777-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Modified-site
                                                                                                                                                                                                                                                                                         Н
                                                                                                                                                                                                                                                                                      GFIATLCTKXXXXVLDFGIDKXXXXXLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                   26
                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-203063P.
2000US-212042P.
                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2001WO-US40690
                                                                                            cytotoxic peptide; epsilon-amino group;
ry; lung; skin; channel-forming peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cytotoxic peptide; epsilon-amino group; cancer; cytostatic;
ry; lung; skin; channel-forming peptide; apoptosis; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                   AA;
                                                                                                                                   for treating cancer.
                           Location/Qualifiers 24..26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            glutamate acid residue 
C-terminal lysine"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers 23
/note= "Lys({epsilon-gamma}-Glu-{alpha-gamma}-Glu);
where {epsilon-gamma} represents a peptide bond between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "Addition of two gamma glutamate linked side-chain glutamate acid residue to the epsilon amino group of the
                                                                                                                                                                                                                      peptide;
                                                                                                                                                                                                                                                                                                                                                         70.78;
72.78;
                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                      26
                                                                                                                                                                                                                                                                                                                                          Score 97.5; DB
Pred. No. 4e-11;
0; Mismatches
                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                         24
                                                                                                                                                                                                                                                                                                                 \frac{\omega}{\omega}
                                                                                                                                                                                                                                                                                                                                                                     23;
                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                            apoptosis; therapy.
                                                                                                                                                                                                                                                                                                                                            9;
                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                            2
```

```
AAG41753
   밁
                                                                                                                                                                                                                                                                                                                                                                                     Ŷ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                               Matches
 25-FEB-1999;
05-MAR-1999;
09-MAR-1999;
23-MAR-1999;
25-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsilon-amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, lung or skin. Cytolytic peptide also known as channel-forming peptide, typically disrupt cell membrane, causing cell lysis and death (apoptosis) upon contact. The present sequence is procytotoxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, overy or lung
                                                                            25-FEB-2000;
                                                                                                     06-SEP-2000
                                                                                                                                                   Arabidopsis thaliana
                                                                                                                                                                             termination
                                                                                                                                                                                      Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter;
                                                                                                                                                                                                                           Arabidopsis thaliana protein fragment
                                                                                                                                                                                                                                                                             AAG41753;
                                                                                                                                                                                                                                                                                                     AAG41753 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ĭ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (GREE-) GREENVILLE HOSPITAL SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09-MAY-2000;
16-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-MAY-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-NOV-2001.
                                                                                                                                                                                                                                                    18-OCT-2000
                                                                                                                                                                                                                                                                                                                                                             1 GFIATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
|||||||||
1 GFIATLCTK----VLDFGIDK-----IQLIEDK 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2002-154423/20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8; Page 24; 33pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                               26
                                                                                                                                                                             sequence
                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                            2000EP-0301439
                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000US-203063P.
2000US-212042P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001WO-US40690
                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA;
 99US-0121825.
99US-0123180.
99US-0123548.
99US-0125788.
99US-0126264.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the epsilon amino group of lysine and the gamma carboxyl group of adjacent glutamate, [alpha-gamma] represents a peptide bond between alpha amino group of glutamate and gamma carboxyl group of adjacent glutamate*
                                                                                                                                                                                                                                                                                                    Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                          70.78;
72.78;
                                                                                                                                                                                                                                                                                                                                                                                                             Score 97.5; D
Pred. No. 4e-1
'0; Mismatches
                                                                                                                                                                                                                                                                                                     463
                                                                                                                                                                                                                           SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                          4e-11;
                                                                                                                                                                                                                            IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                        DΒ
                                                                                                                                                                                                                            NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                       23;
                                                                                                                                                                                                                                                                                                                                                                                                               0:
                                                                                                                                                                                                                            51987.
                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                        26;
                                                                                                                                                                                                                                                                                                                                                                                                                                   04-JUN-1999;
07-JUN-1999;
08-JUN-1999;
10-JUN-1999;
10-JUN-1999;
14-JUN-1999;
 21-JUN 1999
22-JUN 1999
23-JUN 1999
24-JUN 1999
24-JUN 1999
29-JUN 1999
30-JUN 1999
01-JUL 1999
01-JUL 1999
06-JUL 1999
06-JUL 1999
07-JUL 1999
11-JUL 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-APR-1999;
04-MAY-1999;
05-MAY-1999;
06-MAY-1999;
06-MAY-1999;
07-MAY-1999;
11-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14 - MAY 1999;
114 - MAY 1999;
18 - MAY 1999;
19 - MAY 1999;
20 - MAY 1999;
21 - MAY 1999;
24 - MAY 1999;
25 - MAY 1999;
27 - MAY 1999;
                                                                                                                                                                                                                                                 16-JUN-1999
16-JUN-1999
17-JUN-1999
18-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-APR-1999
990S-0139454
990S-0139456
990S-0139456
990S-0139456
990S-0139466
990S-0139463
990S-0139463
990S-0139763
990S-0149763
990S-0140853
990S-0140823
990S-0141847
990S-014283
990S-014283
990S-014283
990S-014283
990S-014283
990S-014283
990S-014283
990S-014283
990S-0143624
990S-0143624
990S-0143624
990S-0143624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            990S-0132863
990S-0134218
990S-0134219
990S-0134219
990S-0134271
990S-0134768
990S-0134768
990S-0135141
990S-013533
990S-013533
990S-0135629
990S-0136392
990S-0136392
990S-0136782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99US-0130077
99US-0130449
99US-0130510
99US-0130891
99US-0131449
99US-0132407
99US-0132484
99US-0132486
99US-0132486
99US-0132486
                                                                                                                                                                                                                                                                                                                                                                                                99US-0138094.
99US-0138847.
99US-0138847.
99US-0139119.
99US-0139452.
99US-0139453.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99US-0137502
99US-0137724
99US-0138094
```

```
Qy
 8
                                        Query Match
Best Local s
Matches 9
                                                                                  21 OCT 1999
21 OCT 1999
21 OCT 1999
21 OCT 1999
21 OCT 1999
21 OCT 1999
22 OCT 1999
22 OCT 1999
22 OCT 1999
25 OCT 1999
25 OCT 1999
25 OCT 1999
26 OCT 1999
26 OCT 1999
27 OCT 1999
28 OCT 1999
29 OCT 1999
                                                                                                                                                                                                                                                                                       12-CCT-1999
13-OCT-1999
13-OCT-1999
13-OCT-1999
14-OCT-1999
14-OCT-1999
14-OCT-1999
14-OCT-1999
14-OCT-1999
18-OCT-1999
282 FIAVLCSCNHAGLIDEGID
                     N
                    FIATLCTKXXXXVLDFGID
                                        h 31.9%;
Similarity 47.4%;
9; Conservative
                                                                                 9905-0158369.
9905-0159294.
9905-0159295.
9905-0159330.
9905-0159331.
9905-0159331.
9905-0159331.
9905-0159331.
9905-0160761.
9905-0160761.
9905-0160768.
9905-0160768.
9905-0160815.
9905-0160815.
9905-0160815.
9905-0160815.
9905-0161359.
9905-0161359.
9905-0161359.
9905-0161359.
9905-0161359.
9905-0161359.
9905-0161359.
9905-0161361.
300
                    20
                                        Score 44; DB; Pred. No. 11; 3; Mismatches
                                                              21;
                                                             Length 463;
                                         0
                                      Gaps
```

Search completed: May 9, 2003, 16:15:34 Job time: 53.2353 secs

0

19-JUL-1999
19-JUL-1999
19-JUL-1999
19-JUL-1999
19-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
21-JUL-1999
22-JUL-1999
22-JUL-1999
22-JUL-1999
22-JUL-1999
22-JUL-1999
23-JUL-1999
23-JUL-1999
23-JUL-1999
23-JUL-1999
23-JUL-1999
24-JUL-1999
25-JUL-1999
27-JUL-1999
28-JUL-1999
29-JUL-1999
20-AUG-1999
21-AUG-1999
21-AUG

99US-0144325.
99US-0144333.
99US-0144333.
99US-0144333.
99US-0144335.
99US-0144352.
99US-0144814.
99US-0144814.
99US-0145088.
99US-0145088.
99US-014508.
99US-0145192.
99US-0145224.
99US-0145513.
99US-0146388.
99US-0146388.
99US-0146388.
99US-0146388.
99US-0146388.
99US-0146388.
99US-0146388.
99US-0147038.
99US-0147192.
99US-0147192.
99US-0147192.
99US-0149723.
99US-0149723.
99US-0149723.
99US-0149723.
99US-0149723.
99US-0149723.
99US-0151303.

THS PAGE BLANK (USPTO)

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                   Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Issued_Patents_AA:*
1: /cgn2_6/ptodata/1,
2: /ggn2_6/ptodata/1,
3: /cgn2_6/ptodata/1,
4: /cgn2_6/ptodata/1,
5: /ggn2_6/ptodata/1,
6: /cgn2_6/ptodata/1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-851-422A-1
138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                мау
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                   Match
                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   262574 seqs, 29422922 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gapop 10.0 , Gapext 0.5
   GFIATLCTKXXXXVLDFGIDKXXXXXLIQLIEDKXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/ABCTUS_COMB.pep:*
/cgn2_6/ptodata/1/iaa/backfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9, 2003, 16:13:10; Search time 13.4216 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                  Length
    BG
US-09-019-160-6
US-09-199-637A-132
US-08-706-706-3
US-08-706-706-3
US-08-706-706-3
US-09-019-160-2
US-09-019-160-9
US-09-019-160-9
US-09-019-160-9
US-09-134-001C-5477
US-08-807-332B-5
US-09-338-876-5
US-09-338-876-5
US-09-338-944-509
US-08-738-944-509
US-09-263-352-40
US-09-263-352-40
US-09-263-352-40
US-09-261-337-12
US-09-122-129-12
US-09-340-991-12
US-09-242-859A-2
US-09-549-098-12
US-09-549-098-12
US-09-549-098-12
US-09-340-991-10
US-09-340-991-10
US-09-340-991-10
US-09-340-991-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (without alignments)
81.112 Million cell updates/sec
                           Sequence 3, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 9, Appli
Sequence 9, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 40, Appli
Sequence 40, Appli
Sequence 3, Appli
Sequence 12, Appli
Sequence 10, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                Description
               Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                     Sequence 6,
    Sequence
                                                                                                                                                                                                                                                                                                                                                                      6, Appli
132, App
```

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
35	36	36	36	36	36	36	36	36	36	36	36	36	36	37	37	37	37
25.4	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.8	26.8	26.8	26.8
250	892	892	892	761	761	761	761	761	675	324	324	103	91	420	420	420	403
.42	ა	ட	٢	σı	w	Н	Н	_	4	N	N	N	4	4	4	4	4
US-09-134-001C-4399	PCT-US91-07035-12	US-08-458-819-12	US-07-977-434-12	PCT-US93-06080-2	US-09-099-902B-2	US-08-710-676-2	US-08-192-632-2	US-07-906-395-2	US-09-134-001C-4547	US-08-868-577-11	US-08-671-320-11	US-08-596-319-31	US-09-134-001C-2969	US-09-705-448-1	US-08-974-691-8	US-09-008-271A-4	US-09-549-098-10
ű	Sequence 12, Appl	Sequence 12, Appl	Sequence 12, Appl	Sequence 2, Appli	Sequence 4547, Ap	Sequence 11, Appl	Sequence 11, Appl	Sequence 31, Appl	Sequence 2969, Ap	Sequence 1, Appli	Sequence 8, Appli	~	Sequence 10, Appl				

ALIGNMENTS

```
RESULT 3
US-08-706-702-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Pseudomonas aeruginosa
US-09-199-637A-132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 20.0
                                                                                                                                                                                                                                                                                                                                                                     Patent No. 594861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR FILING DATE: 19
NUMBER OF SEQ ID NOS:
SOFTWARE: FastSEQ for
SEQ ID NO 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/199,637A CURRENT FILING DATE: 1998-11-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: TSONGALIS, JOHN
TITLE OF INVENTION: VIRULENCE-ASSOCIATED NUCLEIC ACID
TITLE OF INVENTION: SEQUENCES AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILE REFERENCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT
                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               117 IATLAVRAARFLMRFSLITGAKDMLQLVNEK 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       287 FGLDKPSGALVAQLVED 303
                                                                                                                                                                                                             STREET: 1100 New CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17 FGIDKXXXXLI-QLIED 32
                           APPLICATION NUMBER: US/08/706,702 FILING DATE: 06-SEP-1996
                                                                                                                                                                ZIP: 20005-3934
                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity 52.9 es 9; Conservative
                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 IATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION:
APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             132, Application US/09199637A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 635541
                                                                                                                                                                                                                                                                                                                                                                                     Application US/08706702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tan,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rahme, Laurence G.
Mahajan-Miklos, Shalina
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drenkard, Eliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Goodman, Howard M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ausubel, Frederick
                                                                                                                                                                                                                                 E: STERNE, KESSLER,
1100 New York Ave.,
                                                                                                                                                                                                                                                                                 Chatterjee, Deb K.
Chatterjee, Deb K.
IVENTION: Cloned DNA Polymerases from Thermotoga
TON: maritima and Mutants Thereof
                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          00786/361002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Man-Wah
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1997-11-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30.4%; Score 42; DB 25.8%; Pred. No. 25; tive 8; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60/066,517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 41.5;
Pred. No. 14;
                                                                                                                                                                                                                                 GOLDSTEIN & FOX, P.L.L.C N.W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 893;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; MOLECULE TYPE: protein US-08-706-702-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 4
US-08-706-706-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 3, Application US/08706706 Patent No. 6015668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 29.7
Best Local Similarity 25.8
Matches 8; Conservative
                                                                                          APPLICATION NUMBER: US/08/706,706
FILING DATE: 06-SEP-1996
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/689,807
FILING DATE: 14-AUG-1996
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO:
                                  APPLICATION NUMBER: FILING DATE: 02-OCT-PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                   SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX, P.L.L.C
STREET: 1100 New York Ave., N.W., Suite 600
                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Hughes, A. John
APPLICANT: Chatterjee, Deb K.
TITLE OF INVENTION: Cloned DNA Polymerases from Thermotoga and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 0
FILING DATE: 02-OCT-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 08-SEP-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 14-AUG-
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                117 IATLAVRAARFLMRFSLITGDKDMLQLVNEK 147
APPLICATION NUMBER: US 01 FILING DATE: 01-JAN-1995
                                                                                                                                                                                                                                                                    COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                               CITY: Washington
STATE: DC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 893 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                          COUNTRY: USA
ZIP: 20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Esmond, Robert W. REGISTRATION NUMBER: 32 REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US 0 FILING DATE: 08-SEP-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US 08/576,759 FILING DATE: 21-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                       NUMBER: US 08/537,400
02-OCT-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  02-OCT-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US 08/689,807
                  us 08/370,190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US 08/525,057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US 08/537,397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US 08/537,400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         32,893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0942,2800006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 41; DB
Pred. No. 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                         Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 893;
```

0

PRIOR APPLICATION DATA:

FILING DATE: APPLICATION NUMBER:

30-SEP-1994

US 08/316,423

APPLICATION NUMBER: FILING DATE: 21-DE

21-DEC-1995

us 08/576,759

0

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; MOLECULE TYPE: protein US-08-706-706-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-019-160-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/09019160 Patent No. 6306588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                           SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/019,160 FILING DATE: 06-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: 08-SEP-1995
ATTORNEY/AGENT INFORMATION:
NAME: Esmond, Robert W.
                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Solus, Josep
APPLICANT: Yang, Shuwe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 893 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELECOMMUNICATION INFORMATION: TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
                                                                 PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/037,393
FILING DATE: 07-FEB-1997
                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 06-JAN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
                               CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           117 IATLAVRAARFLMRFSLITGDKDMLQLVNEK 147
                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: 202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: 32,1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US 08/537,397 FILING DATE: 02-OCT-1995
                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                            STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US 08/525,057
                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX, P.L.L.C
STREET: 1100 New York Ave., N.W., Suite 600
REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 IATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                      20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      amino acid
                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chatterjee,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                       06-JAN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Joseph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Polymerases for Analyzing or Typing Polymorphic Nucleic Acid Fragments and Uses Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29.7%;
                                                                                                                                                      (To be assigned)
32,893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Deb K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            32,893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ω..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 41; DB Pred. No. 38; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0942.2800005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 3; Length 893;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-019-160-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 us-09-019-160-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 7, Application US/09019160 Patent No. 6306588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 29.7%;
Best Local Similarity 25.8%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: 202-371-2540 INFORMATION FOR SEQ ID NO:
                                                                                                              INFORMATION FOR SEQ ID NO: 7:
                                                                                                                                                                                                                                        CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/037,393
FILING DATE: 07-FEB-1997
CLASSIFICATION:
ATTORNEY/ACENT INFORMATION:
ANALYSISSIFICATION:
ANALYSISSIFICATION:
ANALYSISSIFICATION:
ANALYSISSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: not relevant MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION: TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA: APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Solus, Joseph
APPLICANT: Yang, Shuwei
TITLE OF INVENTION: Polymerases for Analyzing or Typing Polymorphic
TITLE OF INVENTION: Nucleic Acid Fragments and Uses Thereof
                                                                                            SEQUENCE CHARACTERISTICS:
                                                                                                                                                 TELECOMMUNICATION INFORMATION: TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
TOPOLOGY: n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117 IATLAVRAARFLMRFSLITGDKDMLQLVNEK 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: 202-371-2540
                                                                                                                                                                                       REGISTRATION NUMBER: 32 REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: (To be assigned) FILING DATE: 06-JAN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY: USA
ZIP: 20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: 0942.4250002
                                 STRANDEDNESS:
                                                                                                                                  TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 IATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH:
                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION:
                                                                                                                                                                                                                        Esmond, Robert W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      amino acid
                                                   amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E: STERNE, KESSLER, GOLDSTEIN & FOX, P.L.L.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      893 amino acids
                                                                      893 amino acids
                                                                                                                                  202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chatterjee,
                   not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SS: not relevant not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                     06-FEB-1998
                                     not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                         us/09/019,160
                                                                                                                                                                                                         32,893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Deb K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>ہ</u>
                                                                                                                                                                                         0942.4250002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 41; DB 4; Length 893; Pred. No. 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
```

```
Query Match
Best Local Similarity
Thehes 8; Conserve
                             RESULT 8
US-09-019-160-9
                                                                                         망
                                                                                                                  ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                             ; TOPOLOGY: no ; MOLECULE TYPE: TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-019-160-8
Sequence 9, Application US/09019160 Patent No. 6306588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 8, Application US/09019160 atent No. 6306588 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                 NFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                          TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/037,393
FILING DATE: 07-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:

APPLICATION NUMBER: (To be assigned)
FILING DATE: 06-JAN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: Polymerases for Analyzing or Typing Polymorphic TITLE OF INVENTION: Nucleic Acid Fragments and Uses Thereof
                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                       117 IATLAVRAARFLMRFSLITGDKDMLQLVNEK 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  117 IATLAVRAARFLMRFSLITGDXDMLQLVNEK 147
                                                                                                                                                                                                                                                   TYPE: amino a
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                       NAME: Esmond, Robert W. REGISTRATION NUMBER: 32, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: FILING DATE: 06-FE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                     3 IATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                     LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 IATLCTKXXXXVLDFGIDKXXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20005-3934
                                                                                                                                                                                                                                                                    amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ន
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IE: STERNE, KESSLER, GOLDSTEIN & FOX, P.L.L.C 1100 New York Ave., N.W., Suite 600
                                                                                                                                                                                                                                                                                  893 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Solus, Jose
Yang, Shuwe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chatterjee, Deb K.
                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                       not relevant
                                                                                                                                                                                                                          protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    06-FEB-1998
                                                                                                                                                                                                                                                        not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Joseph
                                                                                                                                                                29.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               us/09/019,160
                                                                                                                                                                                                                                                                                                                 8:
                                                                                                                                                  8,
                                                                                                                                                                                                                                                                                                                                                                          0942.4250002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 41;
Pred. No.
                                                                                                                                                                Score 41;
Pred. No.
                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4;
                                                                                                                                                                38;
                                                                                                                                                                              DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15;
                                                                                                                                                  15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 893;
                                                                                                                                                                            Length 893;
                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                Gaps
                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Thes 8; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                    ; TOPOLOGY: no; MOLECULE TYPE: US-09-019-160-9
                                                                                                                                                                                                                      RESULT 9
US-09-134-001C-5477
                                                                                                                                                                           GENERAL INFORMATION:
NUMBER OF SEQ ID NOS: 5674
EQ ID NO 5477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENGTH:
```

```
Sequence 5477, Application US/09134001C Patent No. 6380370
                                                            APPLICANT: Lynn Doucette-Stamm et al TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO STAPHYLOCOCC TITLE OF INVENTION: EPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS FILE REFERENCE: GTC-007 CURRENT ENTER TO NUMBER: US/09/134,001C CURRENT APPLICATION NUMBER: US/09/134,001C CURRENT APPLICATION NUMBER: US/09/134,001C CURRENT FILING DATE: 1998-08-13 PRIOR APPLICATION NUMBER: US 60/064,964
PRIOR FILING DATE: 1997-11-08
PRIOR APPLICATION NUMBER: US 60/055,779
PRIOR FILING DATE: 1997-08-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: 202-371-2540 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin Release CURRENT APPLICATION DATA: APPLICATION NUMBER: US/09 FILING DATE: 06-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: Polymerases for Analyzing or Typing Polymorphic TITLE OF INVENTION: Nucleic Acid Fragments and Uses Thereof NUMBER OF SEQUENCES: 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION: TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: Esmond, Robert W.
REGISTRATION NUMBER: 32,
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/037,393
FILING DATE: 07-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                  117 IATLAVRAARFLMRFSLITGDKDMLQLVNEK 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: (TO FILING DATE: 06-JAN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY: USA
ZIP: 20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                              3 IATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            893 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E: STERNE, KESSLER,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Solus, occang, Shuwei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29.7%;
ilarity 25.8%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chatterjee,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      not relevant
E: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Joseph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              us/09/019,160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (To be assigned)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Deb K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0942.4250002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N.W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 893;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
```

```
Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÔ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Thes 7; Conserve
                                                                                                                                                          밁
                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; ORGANISM: Staphylococcus epidermidis US-09-134-001C-5477
                                                                                            US-09-338-876-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-807-332B-5
                                                                                                                                                                                                                                                                                  US-08-807-332B-5
                                               Sequence 5, Application Patent No. 6187584
GENERAL INFORMATION:
                                                                                                                                                                                                                     Best Local Similarity Matches 7; Conserv
                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 5, Applicati
Patent No. 5959074
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: 303/863-0223
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 80203
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
APPLICANT: Dreyfus, David H.
APPLICANT: Gelfand, Erwin W.
TITLE OF INVENTION: PRODUCTS AND PROCESSES FOR REGULATION OF
                                                                                                                                                                                                                                                                                                 TOPOLOGY: 1
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 40 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION: TELEPHONE: 303/863-9700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/01
FILING DATE: 28-FEB-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: KOVATIK, JOSEPh E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Dreyfus, David H. APPLICANT: Gelfand, Erwin W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES:
                                                                                                                                                        17 GHYOTLCTNFRSLAIDKGV 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96 TYCTKIIYQAYKYGVDK 112
                                                                                                                                                                                                                                                                                                                              STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Kovarik, Joseph REGISTRATION NUMBER: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Sheridan noss
STREET: 1700 Lincoln St., Suite 3500
                                                                                                                                                                                      1 GFIATLCTKXXXXVLDFGI 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5 TLCTKXXXXVLDFGIDK 21
                                                                                                                                                                                                                                                                                                                                                amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Denver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Application US/08807332B
                                                                              Application US/09338876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Floppy disk
                                                                                                                                                                                                                                                                                                 peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENE RECOMBINATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRODUCTS AND PROCESSES FOR REGULATION OF
                                                                                                                                                                                                                                   26.8%;
36.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US/08/807,332B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       33,005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 40; DB Pred. No. 6.9; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                            2879-39
                                                                                                                                                                                                                                                Score 37;
                                                                                                                                                                                                                                       Pred. No.
                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DВ
6.9;
                                                                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 144;
                                                                                                                                                                                                                                                  Length 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                     0,
```

```
묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; TOPOLOGY: linear; MOLECULE TYPE: peptide US-09-338-876-5
                                                                       ; ORGANISM: Staphylococcus epidermidis US-09-134-001C-4599
                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 12
US-09-134-001C-4599
                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
APPLICANT: Lynn Doucette-Stamm et al
APPLICANT: Lynn Doucette-Stamm et al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO STAPHYLOCOCC
TITLE OF INVENTION: EPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                     NUMBER OF SEQ ID NOS: 5674
SEQ ID NO 4599
LENGTH: 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
 Matches
                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                              Sequence 4599, Application US/09134001C. Patent No. 6380370
                                                                                                                                                                          PRIOR FILING DATE: 1997-11-08
PRIOR APPLICATION NUMBER: US 60/055,779
PRIOR FILING DATE: 1997-08-14
                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/09/134,001C CURRENT FILING DATE: 1998-08-13 PRIOR APPLICATION NUMBER: US 60/064,964 PRIOR FILING DATE: 1997-11-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 303/863-0223 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
PRIOR APPLICATION UMBER: 08/807
APPLICATION UMBER: 1997
FILING DATE: 28-FEB-1997
ATTORNEY/AGENT INFORMATION:
NAME: KOVATÍK, JOSEPh E.
                                                                                                                                                                                                                                                                                        FILE REFERENCE: GTC-007
                                                                                                          TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: 28
TELECOMMUNICATION INFORMATION:
TELEPHONE: 303/863-9700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible OPERATING SYSTEM: PC, DOS/MS-DOS SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity 36.1 hes 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE: 303/863-0223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: Denver
STATE: CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17 GHYQTLCTNFRSLAIDKGV 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/09/338,876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZIP: 80203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: Sheridan noss
STREET: 1700 Lincoln St., Suite 3500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GFIATLCTKXXXXVLDFGI 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     40 amino acids
 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENE RECOMBINATION 32
                  26.8%;
31.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           08/807,332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ģ
4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
                  Score 37;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2879-39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 37;
 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                 DB 4; Length 126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10;
 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 40;
 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

1 GFIATLCTKXXXXVLDFGIDKXXXXXLIQL 29

8

43 GIIATMPAVYLAAIIALAIDHKGQQLIQM

71

RESULT 13 US-08-738-944-50

۲.

```
ş
                                                                                                                                                                                                              9
                                                                                                                                             US-09-263-352-40
                                                                                                                                                                                                                                                                                                                                        NAME/KEY: CXC-AMN20;
LOCATION: 1...262;
OTHER INFORMATION:
US-08-738-944-50
                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 36.7
Conservative
                                                                                                            Sequence 40, Application US/09263352
Patent No. 6242211
                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Peterson, T.
APPLICANT: Brian, P.
TITLE OF INVENTION: METHODS FOR GENERATING
TITLE OF INVENTION: PAHWAYS
FILE REFERENCE: 8757-010
CURRENT APPLICATION NUMBER: US/09/263,352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION UNMBER: USSN 0
FILING DATE: 24-APR-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 87
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-790-9090
TELEPAX: 212-869-8864
TELEX: 66141 PENNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM: MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                              226 ATLRTKFGKAYQDF -- DTSISYLLEMMIDK 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: Coruzzi, Laura A REGISTRATION NUMBER: 30,742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: FILING DATE: 24-OCT
                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: amino acid
STRANDEDNESS: sir
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CITY: New York
                                                                                                                                                                                                                                           4 ATLCTKXXXXVLDFGIDKXXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RY: USA
10036/2711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Application
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    262 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Peterson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pennie & Edmonds
                                                                                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24-OCT-1996
                                                                                                                                                                                                                                                                                         26.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  METHODS FOR GENERATING AND SCREENING NOVEL METABOLIC PATHWAYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/08738944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USSN 08/639,255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US/08/738,944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8757-007
                                                                                                                                                                                                                                                                                         Score 37; DB
Pred. No. 50;
                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                        DB 1;
                                                AND SCREENING NOVEL METABOLIC
                                                                                                                                                                                                                                                                          13;
                                                                                                                                                                                                                                                                                                       Length 262;
                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                         2
                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                         1;
```

Query Match

26.8%;

Score 37;

DB 1;

Length 395;

```
RESULT 15
US-08-723-938-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-263-352-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 40
LENGTH: 262
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Patent No. 5776759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT FILING DATE: 1999-03-05
EARLIER APPLICATION NUMBER: 08/986,186
EARLIER FILING DATE: 1997-12-05
NUMBER OF SEQ ID NOS: 41
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                               INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 395 amino acids
                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Billings, Lucy J
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-0
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Streptomyces coelicolor
                            IMMEDIATE SOURCE:
                                              ORIGINAL SOURCE:
                                                                            ANTI-SENSE:
                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: Incyte Ph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Bandman, Olga
APPLICANT: Coleman, Roger
TITLE OF INVENTION: TWO NO
                                                            FRAGMENT TYPE:
                                                                                       HYPOTHETICAL:
                                                                                                       MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    226 ATLRTKFGKAYODF -- DTSISYLLEMMIDK 253
                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                              OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 1.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: Palo Alto
LIBRARY: LUNGNOT02
CLONE: 312099
                                                                                                                                                                                                                                TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZIP: 94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET:
                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity es 11; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4 ATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION:
                                                                                                                                                    amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Application US/08723938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3174 Porter Drive
                                                                                                                                                                                                                                415-845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          U.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                            ŏ
                                                                                                                     ss: single
linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Incyte Pharmaceuticals,
                                                                                          š
                                                            N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Diskette
                                                                                                     peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                    US/08/723,938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NOVEL HUMAN CATHESPIN PROTEINS
                                                                                                                                                                                                  ω
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 37;
Pred. No.
                                                                                                                                                                                                                                                                             PF-0125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 262;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
```

6; Indels 0; Gaps 0;	Search completed: May 9, 2003, 16:19:26 Job time : 15.4216 secs	Db 272 TLCAKGCAAILDTG 285	Qy 5 TLCTKXXXXVLDFG 18	Hest Local Similarity 50.0%; Pred. No. 80; Matches 7; Conservative 1; Mismatches
				0; Gaps

This page blank (uspro)

```
Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-851-422A-1
138
1 GFIATLCTKXXXXV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        мау
                                                                                                                                                                                                                                                                                                                             Match
                                                                                                                                                                                                                                                                                                                                            Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10:
11:
12:
14:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    87654321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            349150 seqs, 92025710 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
     Published_Applications_AA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 : /cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep:*
    /cgn2_6/ptodata/2/pubpaa/PCTUS_PUBCOMB.pep:*
    /cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*
    /cgn2_6/ptodata/2/pubpaa/US09_NEW_PUB.pep:*
    /cgn2_6/ptodata/2/pubpaa/US09_NEW_PUB.pep:*
    /cgn2_6/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
    /cgn2_6/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
    /cgn2_6/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
    /cgn2_6/ptodata/2/pubpaa/US60_NEW_PUB.pep:*
    /cgn2_6/ptodata/2/pubpaa/US60_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GFIATLCTKXXXXVLDFGIDKXXXXLIQLIEDKXXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/US06_PUBCOMB.pep:*
/cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9, 2003, 16:15:46; Search time 15.598 Seconds
(without alignments)
218.294 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                             Length
   893
893
893
893
453
718
737
737
737
737
737
737
737
737
3172
                                                                                                                                                                                                               431
893
460
893
893
893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 5.1.4_p5_4578 (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                             DB
     10
10
10
10
10
10
10
10 US-09-741-664-1
10 US-09-741-664-2
10 US-09-800-729-83
10 US-09-928-175-21
10 US-09-928-175-20
10 US-09-928-175-20
10 US-09-864-761-8379
10 US-09-860-670-112
10 US-09-915-582-87
10 US-09-915-582-87
10 US-09-915-582-87
                                                                                                                                                                          US-09-986-480-189

US-09-891-332A-6

US-09-975-719-132

US-09-891-332A-2

US-09-891-332A-7

US-09-891-332A-8

US-09-891-332A-8

US-09-891-332A-9

US-09-891-332A-9
                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37
                                                             Sequence 1, Appli
Sequence 2, Appli
Sequence 83, Appl
Sequence 21, Appl
Sequence 3, Appli
Sequence 20, Appli
Sequence 48379, A
                                                                                                                                                                       Sequence 189, Appli
Sequence 132, Appli
Sequence 2, Appli
Sequence 7, Appli
Sequence 7, Appli
Sequence 9, Appli
Sequence 9, Appli
Sequence 3, Appli
 Sequence 112, App
Sequence 87, Appl
Sequence 670, App
Sequence 13183, A
                                                                                                                                                                                                                                                                                                                        Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-986-480-189; Sequence 189, Applicat; Publication No. US200; GENERAL INFORMATION:
                                                                                                                                              RESULT 2
US-09-891-332A-6
                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                         ; ORGANISM: Homo sapiens US-09-986-480-189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 1
                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 15; Conserv
                                 TITLE OF
```

Result

ŏ

Score

Minimum

Maximum

DB Bd

Post-processing:

Database

Scoring table:

Searched:

Title: Perfect score:

OM protein -

on:

Sequence:

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25		23			20
4	4	4	4	4	34.5	4	4	4	35	35	35	35	35	35	35		36		36	36	36	36	37	37	37
25.0	25.0	25.0	25.0		25.0				25.4	25.4	25.4	25.4	25.4	25.4	25.4	26.1	26.1	26.1	26.1	26.1	26.1		26.8	•	26.8
489	489	489	489	489	489	384	372	315	885	856	724	381	283	131	116	1192	618	436	213	155	58	58	433	395	390
9	9	9	9	9	9	10	10	10	10	10	9	9	9	10	10	9	9	10	10	_	10	9	9	9	φ
US-09-951-535-4	US-09-951-535-2	- 1	US-09-783-388-2	US-09-834-721-4	US-09-834-721-2	US-09-815-242-12605	US-09-815-242-5277	US-09-815-242-13514	US-09-828-423-5	US-09-815-242-11489	US-09-881-579-4	US-09-738-626-5896	US-09-738-626-3533	US-09-881-752A-326	US-09-864-761-34645	US-10-170-102-2	US-09-738-626-3975	US-09-796-766-21	US-09-844-468-4	US-08-781-986A-5255	US-09-764-869-967	US-10-091-504-967	US-09-964-899-11	10-094-080-	US-09-969-384-15
Sequence 4, Appli	Sequence 2, Appli	Sequence 4, Appli	Sequence 2, Appli	Sequence 4, Appli	Sequence 2, Appli	12605,	Sequence 5277, Ap	Sequence 13514, A	Sequence 5, Appli	Sequence 11489, A	Sequence 4, Appli	Sequence 5896, Ap	Sequence 3533, Ap	Sequence 326, App	Sequence 34645, A	Sequence 2, Appli	Sequence 3975, Ap	•	Sequence 4, Appli	Sequence 5255, Ap	Sequence 967, App	Sequence 967, App	Sequence 11, Appl	3, A	Sequence 15, Appl

ALIGNMENTS

APPLICANT: ROSEN et al.
APPLICANT: ROSEN et al.
FILE REFERENCE: PS500P1
CURRENT APPLICATION NUMBER: US/09/986,480
CURRENT FILING DATE: 2001-11-08
PRIOR APPLICATION NUMBER: PCT/US00/12788
PRIOR APPLICATION NUMBER: PCT/US00/12788
PRIOR APPLICATION NUMBER: US 60/134,068
PRIOR FILING DATE: 2000-05-11
PRIOR FILING DATE: 1999-05-13
NUMBER OF SEQ ID NOS: 456
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 189
LENCTH: 431
TYPE: PRT Application US/09986480 5. US20030027999A1

3 IATLCT - KXXXXVLDFGIDKXXXXLIQLIEDK 31.2%; ilarity 45.5%; Conservative Score 43; Pred. No. Mismatches 45 15; Indels 2 Gaps

DB 9;

Length 431;

Sequence 6, Application US/09891332A Patent No. US20020168646A1 GENERAL INFORMATION: APPLICANT: Chatterjee, Deb Solus, Joseph ~

41 40 39 39 37 37 37

NUMBER OF Yang, Shuwei INVENTION: Polymerases for Analyzing or Typing Polymorphic Nucleic Acid Fragments and Uses Thereof F SEQUENCES: 93

```
; TYPE: PRT
; ORGANISM: Pseudomonas aeruginosa
US-09-975-719-132
                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-975-719-132 : Sequence 132, Application US/09975719 : Publication No. US20030022349A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-891-332A-6
                                                                                                                                       SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 132
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                            APPLICANT: Rahme, Laurence G.
TITLE OF INVENTION: VIRULENCE-ASSOCIATED NUCLEIC ACID
TITLE OF INVENTION: SEQUENCES AND USES THEREOF
FILE REFERENCE: 00786/361003
CURRENT APPLICATION NUMBER: US/09/975,719
CURRENT FILING DATE: 2001-10-10
                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: US 09/199,637
PRIOR FILING DATE: 1998-11-25
PRIOR APPLICATION NUMBER: US 60/066,517
                                                                                                                                                                              PRIOR FILING DATE: 1997-11-25
NUMBER OF SEQ ID NOS: 437
                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Ausubel, Frederick M. APPLICANT: Rahme, Laurence G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: 6
                                                                                                                      ENGTH: 460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3 IATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS: not relevant
TOPOLOGY: not relevant
MOLECULE TYPE: peptide
SEQUENCE DESCRIPTION: SEQ ID NO: 6:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: ESMOND, ROBERT W.
REGISTRATION NUMBER: 32,893
REFERENCE/DOCKET NUMBER: 09-
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
B; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R APPLICATION DATA:
APPLICATION NUMBER: 09/019,160
FILING DATE: <Unknown>
APPLICATION NUMBER: US 60/037,393
FILING DATE: 07-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/09/891,332A FILING DATE: 27-Jun-2001 CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX, P.L.L.C STREET: 1100 New York Ave., N.W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 893 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE: 202-3/1-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30,48;
    30.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8; Mismatches
  Score 41.5;
Pred. No. 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0942,4250002
                      DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15;
                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 893;
                      Length 460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                        US-09-891-332A-7
                                                                                                                                                                                                                                                                                                US-09-891-332A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-891-332A-2
Sequence 7, Application US/09891332A Patent No. US20020168646A1 GENERAL INFORMATION:
                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2, Application US/09891332A Patent No. US20020168646A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                    117 IATLAVRAARFLMRFSLITGDKDMLQLVNEK 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               287 FGLDKPSGALVAQLVED 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17
                                                                                                                                                                          3 IATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: Esmond, Robert W.
REGISTRATION NUMBER: 32,893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/891,332A
FILING DATE: 27-Jun-2001
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yang, Shuwei
TITLE OF INVENTION: Polymerases for Analyzing or Typing Polymorphic
Nucleic Acid Fragments and Uses Thereof
                                                                                                                                                                                                                                                                                                              STRANDEDNESS: not relevant
TOPOLOGY: not relevant
MOLECULE TYPE: protein
SEQUENCE DESCRIPTION: SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 893 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Chatterjee, Deb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FGIDKXXXXLI-QLIED 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 09/019,160
FILING DATE: CINKNOWN>
APPLICATION NUMBER: US 60/037,393
FILING DATE: 07-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: 202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: USA
ZIP: 20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX, P.L.L.C
STREET: 1100 New York Ave., N.W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                     29.7%;
25.8%;
                                                                                                                                                                                                                 Score 41; DB (
Pred. No. 55;
B; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0942.4250002
                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                   15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4.
                                                                                                                                                                                                                                                       Length 893;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <del>.</del>.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>.</u>
```

APPLICANT: Chatterjee, Deb K.

Solus, Josep Yang, Shuwei

```
RESULT 6
US-09-891-332A-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; SEQUENCE DESCRIPTION: SEQ ID NO: 7: US-09-891-332A-7
                                                                                                                                                                                                                                                                                                                                                                 Sequence 8, Application US/09891332A Patent No. US20020168646A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
Matches 8; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO: 7:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         117 TATLAVRAARFLMRFSLITGDKDMLQLVNEK 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 IATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/891,332A
FILING DATE: 27-Jun-2001
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/019,160
FILING DATE: <UNKNOWN>
APPLICATION NUMBER: US 60/037,393
FILING DATE: 07-FEB-1997
ATTORNEY/AGENT INFORMATION:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX, P.L.L.C STREET: 1100 New York Ave., N.W., Suite 600
                                                                                                                                                                                CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER,
STREET: 1100 New York Ave.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS: not relevant TOPOLOGY: not relevant MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Esmond, Robert W.
REGISTRATION NUMBER: 32,893
REFERENCE/DOCKET NUMBER: 094
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Polymerases for Analyzing or Typing Polymorphic
Nucleic Acid Fragments and Uses Thereof
                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                      TITLE OF
                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
                                                                                                      ZIP:
                                                                                                                                             CITY: Washington
STATE: DC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 893 amino acids TYPE: amino acid
                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: 202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                             INVENTION: Polymerases for Analyzing or Typing Polymorphic
Nucleic Acid Fragments and Uses Thereof
                                                                                                        20005-3934
                                                                                                                                                                                                                                                                                                                                                 Chatterjee, Deb K.
                                                                                                                                                                                                                                                                                                     Solus, Joseph
Yang, Shuwei
                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 41; DB 9; Pred. No. 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0942.4250002
                                                                                                                                                                                   N.W., Suite 600
      Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-891-332A-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION DATA:
```

```
; SEQUENCE DESCRIPTION: SEQ ID NO: US-09-891-332A-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 9, Application US/09891332A Patent No. US20020168646A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  117 IATLAVRAARFLMRFSLITGDKDMLQLVNEK 147
                                    PRIOR APPLICATION DATA:

APPLICATION NUMBER: 09/019,160

FILING DATE: <Unknown>
APPLICATION NUMBER: US 60/037,393

FILING DATE: 07-FEB-1997

AFTORNEY/AGENT INFORMATION:

NAME: Esmond, Robert W.

REGISTRATION NUMBER: 32,893

REFERENCE/DOCKET NUMBER: 0942.4250002
                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Vers
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/891,332A
FILING DATE: 27-Jun-2001
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3 IATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS: not relevant TOPOLOGY: not relevant MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
TELEFAX: 202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: <UNKNOWN>
APPLICATION NUMBER: US 60/037,393
FILING DATE: 07-FEB-1997
ATTORNEY/AGENT INFORMATION:
                      TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: Polymerases for Analyzing or Typing Polymorphic Nucleic Acid Fragments and Uses Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Chatterjee, Deb K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 27-Jun-2001
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX, P.L.L.C
STREET: 1100 New York Ave., N.W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: Esmond, Robert W. REGISTRATION NUMBER: 32,893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: 09/019,160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/09/891,332A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ENGTH: 893 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Solus, Josep
Yang, Shuwei
202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Joseph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 41; DB 9; Length 893; Pred. No. 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0942.4250002
                                                                                                                                                                                                                                                                                                                                                      Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

0,

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE DESCRIPTION: SEQ ID NO: US-09-891-332A-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-229-173-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 3, Application US/09229173 Publication No. US20030027296A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                  TELEFAX: 202-371-2540 INFORMATION FOR SEQ ID NO: 3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO: 9: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: Cloned DNA Polymerases from TITLE OF INVENTION: maritima and Mutants Thereof NUMBER OF SEQUENCES: 47
                  SEQUENCE CHARACTERISTICS:
                                                                                           REFERENCE/DOCKET NUMBER: 09
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                             APPLICATION NUMBER: US 08/576,759
FILING DATE: 21-DEC-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/537,397
FILING DATE: 02-OCT-1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/706,702
FILING DATE: 06-SEP-1996
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 14-AUG-
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                        FILING DATE: 08-SEP-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 117 IATLAVRAARFLMRFSLITGDKDMLQLVNEK 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 1100 New CITY: Washington STATE: DC
                                                                                                                               NAME: Millonig, Robert C. REGISTRATION NUMBER: 34,395
                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US 0: FILING DATE: 02-OCT-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                           TELEPHONE:
                                                                                                                                                                                                               APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match 29.7%;
Local Similarity 25.8%;
es 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 IATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS: not relevant TOPOLOGY: not relevant MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: 202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 893 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3: STERNE, KESSLER, GOLDSTEIN & FOX, P.L.L.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chatterjee, Deb K.
/ENTION: Cloned DNA Polymerases from Thermotoga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PatentIn Release #1.0,
                                                                           202-371-2600
amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                  14-AUG-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13-JAN-1999
                                                                                                                                                                                                               US 08/525,057
                                                                                                                                                                                                                                                                                                                                                                                           US 08/537,400
                                                                                                                                                                                                                                                                                                                                                                                                                                                      US 08/689,807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/09/229,173
                                                                                                                 0942.2800008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 41; DB 9; Length 893; Pred, No. 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; MOLECULE TYPE: protein US-09-229-173-3
                                                                                                                  US-09-741-664-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-741-664-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Patent No. US20010041334A1
                                                        Matches
                                                                       Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                  TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: Esmond, Robert W.
REGISTRATION NUMBER: 32,893
                                                                                                                                                                                                                                                                                                                                                                                                              OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
COMPUTER: IBM PC com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, K
                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
PRIOR APPLICATION NUMBER: (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION:
                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION: TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            117 IATLAVRAARFLMRFSLITGDKDMLQLVNEK 147
117 IATLAVRAARFLMRFSLITGDKDMLQLVNEK 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Washington
STATE: DC
                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                        Local Similarity
es 8; Conserv
                                                                                                                                                                       LENGTH:
                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ZIP:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity es 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: linear
                                                                                                                              ropology:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 IATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                         IATLCTKXXXXVLDFGIDKXXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20005
                                                                                                                                                          amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application us/09741664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1100 New York Avenue, N.W., Suite 600
                                                                                                                                                                    893 amino acids
                                                                                                                                                                                                                  202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Solus, Joseph
                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                              E: Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rashtchian, Ayoub
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                            linear
                                                                                                                                        single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Stable Compositions for Nucleic Acid Sequencing and Amplification
                                                                     29.7%;
25.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KESSLER, GOLDSTEIN & FOX P.L.L.C
                                                                                                                                                                                                                                                                                                                                                                                                      US/09/741,664
                                                                                                                                                                                                                                                                                                                                                 09/049,021
                                                                                                                                                                                                                                                            0942.3910000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 41;
Pred. No.
                                                                     Score 41; DB Pred. No. 55;
                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                 Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                   10;
                                                        15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 893;
                                                                                 Length 893;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

RESULT 10 US-09-741-664-2

Sequence 2, Application US/09741664 Patent No. US20010041334A1 GENERAL INFORMATION:

```
SOFTWARE: PatentIn Ver.
SEQ ID NO 83
LENGTH: 453
TYPE: PRT
ORCANISM: Homo sapiens
US-09-800-729-83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Thes 8; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                       US-09-800-729-83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-741-664-2
                                                                                                                                                                                                                                                                                                                                                                 Sequence 83, Application US/09800729 Patent No. US20020068319Al
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/09/800,729
CURRENT FILING DATE: 2001-03-08
PRIOR APPLICATION NUMBER: PCT/US00/26013
PRIOR FILING DATE: 2000-09-22
PRIOR APPLICATION NUMBER: 60/155,709
PRIOR FILING DATE: 1999-09-24
                                                                                                                                                                                                                                                                                         APPLICANT: Ni et al.
TITLE OF INVENTION: 32
FILE REFERENCE: PE044P1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO: 2: SEQUENCE CHARACTERISTICS: LENGTH: 893 amino acids TYPE: amino acid STRANDEDNESS: single
                                                                                                                                                                 NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Esmond, Robert W.
REGISTRATION NUMBER: 32,893
REFERENCE/DOCKET NUMBER: 094
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
STREET: 1100 New York Avenue, N.W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/09/741,664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Rashtchian, Ayoub
APPLICANT: Solus, Joseph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              117 IATLAVRAARFLMRFSLITGDKDMLQLVNEK 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: 1100 New CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 IATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20005
                                                                                                                                                PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                봈
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       202-371-2600
                                                                                                                                                                                                                                                                                                              32 Human secreted proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Stable Compositions for Nucleic Acid Sequencing and Amplification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29.7%;
 29.0%;
36.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09/049,021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8; Score 41; DB 8; Pred. No. 55; 8; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0942.3910000
Score 40;
Pred. No.
 DB 10;
40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 893;
                 Length 453;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
```

0;

RESULT 14

```
SOFTWARE: PatentIn versio
SEQ ID NO 3
LENGTH: 737
TYPE: PRT
ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 13
US-10-229-735-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TYPE: PRT; ORGANISM: Mus musculus US-09-928-175-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-928-175-21
                                                                                                                                     US-10-229-735-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:

APPLICANT: Baylor College of Medicine
APPLICANT: Agoulnik, Alexander I.
                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 3, Application US/10229735 Publication No. US20030082650A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 21
LENGTH: 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 21, Application US/09928175 Patent No. US20020123618A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                  Matches
                                                                                                Query Match
                                                                Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                   APPLICANT: Agoulnik, Alexander I.
TITLE OF INVENTION: The GREAT Gene and Protein
FILE REFERENCE: 7752/73263
CURRENT APPLICATION NUMBER: US/10/229,735
CURRENT FILING DATE: 2002-08-29
PRIOR APPLICATION NUMBER: 60/315,696
PRIOR FILING DATE: 2001-08-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/09/928,175
CURRENT FILING DATE: 2001-08-10
PRIOR APPLICATION NUMBER: 60/224,455
PRIOR FILING DATE: 2000-08-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Rogers, No. US20020123618Alma
TITLE OF INVENTION: Leucine-Rich G Protein Coupled Receptor-8 Molecules and
TITLE OF INVENTION: Uses Thereof
FILE REFERENCE: 00-1229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Paszty,
                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: PRIOR FILING DATE: 2002-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 42
                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241 TQCSKDKLINLDLCIDRSSYTLVDL 265
482 GFLATLSTEVSVLLLTF 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            463 GFLATLSTEVSVLLLTF 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
hes 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GFIATLCTKXXXXVLDF 17
                               1 GFIATLCTKXXXXVLDF 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TLCTKXXXXVLDFGIDKXXXXLIQL 29
                                                                                                                                                                                                                    PatentIn version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gong, Jianhua
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Daugherty, Betsy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Christopher J.
                                                                                                                                                                                                                                                     2002-01-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28.3%;
                                                                                  28.3%;
                                                                                                                                                                                                                                                                     60/351,432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 39;
Pred. No.
                                                                                  Score 39; DB 9;
Pred. No. 1e+02;
                                                                                                Score 39;
                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 10;
le+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                  Length 737;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 718;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                  0
```

```
PRIOR APPLICATION NUMBER: 60/224,455
PRIOR FILING DATE: 2000-08-10
NUMBER OF SEQ ID NOS: 42
SOFTWARE: PATENTIN VER: 2.0
SEQ ID NO 20
LENGTH: 737
TYPE: PRT
ORGANISM: Mus musculus
US-09-928-175-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-864-761-48379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/09/864,761 PRIOR APPLICATE: 2001-05-22 PRIOR APPLICATION NUMBER: US/09/864,761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Chen, Wensheng
TITLE OF INVENTION: HEME EXPRESSION ANALYSIS BY MICROARRAY
FILE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY
FILE REFERENCE: Acomica-X-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/09/928,175
CURRENT FILING DATE: 2001-08-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Rogers, No. US20020123618Alma
TITLE OF INVENTION: Leucine-Rich G Protein Coupled Receptor-8 Molecules and
TITLE OF INVENTION: Uses Thereof
FILE REFERENCE: 00-1229
                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: US 09/632,366 PRIOR FILING DATE: 2000-08-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: US 60/207,456 PRIOR FILING DATE: 2000-05-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR FILING DATE: 2000-02-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: US 60/180,312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Penn, Sharron G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Paszty,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            482 GFLATLSTEVSVLLLTF 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28.3%;
Local Similarity 47.1%;
es 8; Conservarion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GFIATLCTKXXXXVLDF 17
                                     FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00668
FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00663
                                                                                                                             FILING DATE: 2001-01-30 APPLICATION NUMBER: PCT/US01/00665
                                                                                                                                                                     APPLICATION NUMBER: PCT/US01/00669
                                                                                                                                                                                           APPLICATION NUMBER: PCT/US01/00667
FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00664
FILING DATE: 2001-01-30
                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US 60/236,359
FILING DATE: 2000-09-27
APPLICATION NUMBER: PCT/US01/00666
FILING DATE: 2001-01-30
                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: GB 24263.6 FILING DATE: 2000-10-04
APPLICATION NUMBER: PCT/US01/00662
                    FILING DATE: 2001-01-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            48379, Application
o. US20020048763A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gong, Jianhua
Daugherty, Betsy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rank, David R.
Hanzel, David K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/09928175
320020123618A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application US/09864761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Christopher J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 No. US20020123618Alma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 39; DB 10
Pred. No. 1e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 737;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
₽
                                                                                                                                                                 ; OTHER INFORMATION:
; OTHER INFORMATION:
US-09-864-761-48379
                                                                                                                                                                                                                                                                                                                                                                                           PRIOR FILING DATE: 2001-01-30
PRIOR FILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00670
PRIOR APPLICATION NUMBER: US 60/234,687
PRIOR APPLICATION NUMBER: US 60/234,687
PRIOR APPLICATION NUMBER: US 09/608,408
PRIOR FILING DATE: 2000-06-30
PRIOR FILING DATE: 2000-06-30
PRIOR FILING DATE: 2000-06-30
PRIOR FILING DATE: 2000-01-30
PRIOR FILING DATE: 2000-01-30
PRIOR FILING DATE: 2000-01-30
PRIOR FILING DATE: 2000-01-31
PRIOR FILING DATE: 2000-01-31
PRIOR FILING DATE: 2000-01-31
                                                                                                                                                                                                                                                                                                               SOFTWARE: Annomax Sequence Listing Engine vers. 1.1
SEQ ID NO 48379
LENCTH: 48
TYPE: PRT
                                                                                                    Query Match
Best Local
                                                                                  Matches
                                                                                                                                                                                                                                                ORGANISM: Homo sapiens FEATURE:
OTHER INFORMATION: MAP
                                                                                                                                                                                                                              OTHER INFORMATION:
                                                                                Local Similarity
nes 7; Conserv
8 TLCAKGCAAILDTG
                                       5 TLCTKXXXXVLDFG 18
                                                                                  Conservative
                                                                                                                                                                                EXPRESSED IN LUNG, SIGNAL - 59
SWISSPROT HIT: 096009, EVALUE 7.00e-22
EST_HUMAN HIT: A1924523.1, EVALUE 9.00e-21
                                                                                                                                                                                                                                                  MAP TO AC008655.3
21
                                                                                                  26.8%;
                                                                              Score 37;
Pred. No.
1; Mismatc
                                                                                  Mismatches
                                                                                                DB
12;
                                                                                                                        10;
                                                                                                                   Length 48;
                                                                                  Indels
                                                                                  0
                                                                                  Gaps
```

Search completed: May 9, 2003, 16:20:16 Job·time: 17.598 secs

0,

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
      40.5
40.5
40.5
40.5
39.5
39.5
39.5
39.5
39.5
                                                                                                                                                                                                                                                                                                                                                                     42
41.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIR_73:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           May 9, 2003, 16:12:15; Search time 23:2157 Seconds (without alignments) 153:214 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    283224 seqs, 96134422 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-851-422A-1
138
1 GFIATLCTKXXXXVLDFGIDKXXXXLIQLIEDKXXXX
    GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length DB
    A81410
JO1535
JO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S25283
S49144
S49145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
holliday junction
SwF8a protein - sw
probable periplasm
hypothetical prote
hypothetical prote
fatty acid/phospho
                                                                                                                                                                   hypothetical prote
S1L protein - vari
Q1L protein - vari
RNA-directed DNA p
hypothetical prote
hypothetical prote
                                                                                                                                                                                                                                                                                                                                                                                                       hypothetical prote probable UDPglucos syntaxin-binding p probable porin PAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         amoebapore A precu
amoebapore B precu
amoebapore C precu
hypothetical prote
hemagglutinin - ph
hemagglutinin - ph
                                                                                                                                                                                                                                                                                                                      serine proteinase
hypothetical prote
Oll protein - vacc
                                                                                                                          type I site-specif hypothetical prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Description
                                                                                                                                                                                                                                                                                                                                                                                       hypothetical prote
```

RESULT 2 \$49144 amoebapore B precursor - Entamoeba histolytica C:Species: Entamoeba histolytica C:Species: Entamoeba histolytica C:Accession: \$61440; \$61452; \$49144 R:Leippe, M.; Andrae, J.; Nickel, R.; Tannich, E.; Mueller-1 Mol. Microbiol. 14, 895-904, 1994 A;Title: Amoebapores, a family of membranolytic peptides froa; R:Reference number: \$61449; MUID:95231296; PMID:7715451 A;Accession: \$61440	Ouery Match Ouery Match Ouery Match Best Local Similarity 73.9%; Score 102; DB 1; Length 9 Best Local Similarity 75.8%; Pred. No. 4.1e-11; Matches 25; Conservative 0; Mismatches 0; Indels Oy 1 GFIATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33	17-28,'X',30-41,'X 17-28,'X',30-41,'X 18-28-28-28-28-28-28-28-28-28-28-28-28-28	A EINBL:M83945; NID:g158968; PIDN:AAA29111 EMBL:M83945; NID:g158968; PIDN:AAA29111 is sequence, including the amino end of S.; Schbenberger, O.L.; Horstmann, R.D. ci. U.S.A. 88, 7659-7663, 1991 of U.S.A. 88, 7659-7663, 1991 ng peptide of pathogenic Entamoeba histoad A41279; MUID:91352048; PMID:1881907	SULT 1 5283 5283 5283 Alternate names: pore-forming protein Species: Entamoeba histolytica Date: 22-Nov-1993 #sequence_revision 09-Mar-1996 #text_ Accession: S25283; A41279 Leippe, M.; Tannich, E.; Nickel, R.; van der Goot, G.; BO J. 11, 3501-3506, 1992 Title: Primary and secondary structure of the pore-form Reference number: S25283; MUID:93010939; PMID:1396552 Accession: S25283	ALIGNMENTS	30 39 28.3 396 1 G64313 31 39 28.3 1612 2 S59969 32 39 28.3 1626 2 A39242 33 38.5 27.9 278 2 S17695 34 38.5 27.9 586 2 T51211 35 38 27.5 131 2 B64640 37 38 27.5 153 2 B64640 37 38 27.5 223 2 S43338 39 38 27.5 223 2 S43338 40 38 27.5 234 2 T39032 40 38 27.5 336 2 H96814 41 38 27.5 356 2 B90387 42 38 27.5 356 2 B90387 43 38 27.5 356 2 E64414 44 38 27.5 495 2 T46700 44 38 27.5 574 2 E64414 45 38 27.5 1272 2 C64513
_change 18-Jun-1999 er-Eberhard, H.J. from cytoplasmic granules of	98; 15 8; Gaps 2;		1; PID:g158969 the mature protein, were d .; Mueller-Eberhard, H.J.	change 18-Jun-1999 Pattus, F.; Horstmann, R.D.; ing peptide of pathogenic En		protein-export mem DNA topoisomerase DNA topoisomerase chlorophyll a/b-bi hypothetical prote acyl carrier prote acyl carrier prote proteinase inhibit hypothetical prote proteinase inhibit hypothetical prote conserved hypothetical prote

A; Molecule type: DNA A; Residues: 1-96 <LE2>

```
C:Species: Campylobacter jejuni
C:Species: 11-Mar-2000 #sequence_revision 31-Mar-2000 #text_change 03-Jun-2002
C:Accession: A81410
C:Accession: A81410
R:Parkhill, J.; Wren, B.W.; Mungall, K.; Ketley, J.M.; Churcher, C.; Basham, I.C.W.; Quall, M.; Rajandream, M.A.; Rutherford, K.M.; VanVliet, A.; Whitehead, Nature 403, 665-668, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        F;1-19/Domain: signal sequence *status predicted <SIG>F;16-96/Domain: saposin repeat homology <SAP>F;20-96/Product: samoebapore B *status predicted <MAT>F;24-96,27-90,54-65/Disulfide bonds: *status predicted
                                                                                    A; Molecule type: DNA
A; Residues: 1-215 < PAR>
                                                                                                                                                      A;Title: The genome sequence of the food-boa; Reference number: A81250; MUID:20150912; A;Accession: A81410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F:1-24/Domain: signal sequence #status predicted <SIG>F;21-101/Domain: saposin repeat homology <Spreental <MAT>F;25-101/Product: amoebapore A #status experimental <MAT>F;25-101/32-95,59-70/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Title: Amoebapores, a fami
A; Reference number: S61439;
A; Accession: S61439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           amoebapore C precursor - Entamoeba
C;Species: Entamoeba histolytica
C;Date: 16-Feb1195 #sequence_revis
C;Accession: S61439; S61453; S49145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Superfamily: amoebapore; C; Keywords: antibacterial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: protein A; Residues: 20-63 <LEI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references:
A;Accession: S61452
                         C;Genetics:
                                          A: Experimental source:
                                                                   A;Cross-references:
                                                                                                                                A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                    A81410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C: Keywords: antibacterial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C; Superfamily: amoebapore; saposin repeat homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: protein A; Residues: 25-69 <LEI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-101 <LE2>
                                                                                                                                                                                                                                                                                                                                                          hypothetical protein Cj0618 [imported] - Campylobacter jejuni (strain NCTC 11168)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Accession: S61453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Cross references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Leippe,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ippe, M.; Andrae, J.; Nickel, R.; Tannich, E.; Mueller-Eberhard, H.J.
Microbiol. 14, 895-904, 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             59 GFLGTLCEK----ILSFGVDE----LVKLIEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
Cj0618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GFIATLCTKXXXXVLDFGIDKXXXXLIQ 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Toca L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GLVETLCTK----IVSYGIDKLIEKILE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GFIATLCTKXXXXVLDFGIDKXXXXLIQLIED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . Similarity
10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                          GB:AL139075; GB:AL111168; NID:g6967817; PIDN:CAB75254.1; PID:g696808ce: serotype O2, strain NCTC 11168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL: X76903;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL: X76904;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      family of membranolytic peptides 139; MUID:95231296; PMID:7715451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  39.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Entamoeba histolytica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        saposin repeat homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                revision 12-May-1995 #text_change 18-Jun-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NID: 9509763; PIDN: CAA54225.1; PID: 9509764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 63; DB
Pred. No. 0.00
7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NID:g509761; PIDN:CAA54226.1; PID:g509762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 54; C
Pred. No. 0.
                                                                                                                                                                             food-borne pathogen Campylobacter
150912; PMID:10688204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0.00049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .022;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cytoplasmic granules
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                  jejuni reveals hyp
                                                                                                                                                                                                                                               , S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>-</u>-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'n
                                                                                                                                                                                                                                                                      Chillir
                                                                                                                                                                                                                                               Barre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ģ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ē
```

1

á

hypothetical T32510 RESULT

protein

C44B12.3

Caenorhabditis

elegans

```
A; Molecule type: mRNA
A; Residues: 1-607 <CUR>
A; Cross-references: GB:D10371
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Gene: H
C;Superfamily: measles virus hemagglutinin
C;Reywords: 9lycoprotein; hemagglutinin; transmembrane protein
F;39-55/Domain: transmembrane #status predicted <TMN>
F;19,149,276,391,422,456,587/Binding site: carbohydrate (Asn)
                                                                                                                                    C;Superfamily: measles virus hemagglutinin
C;Keywords: glycoprotein; hemagglutinin; transmembrane protein
F;39-55/Domain: transmembrane *status predicted <TMN>
F;19,149,276,391,422,456,587/Binding site: carbohydrate (Asn) (covalent) *status
                                                                                                                                                                                                                                                                                                 R:Curran, M.D.; O'Loan, D.; Kennedy, S.; Rima, B.K.
J. Gen. Virol. 73, 1189-1194, 1992
A:Title: Molecular characterization of phocine distemper
A:Reference number: JQ1535; MUID:92268877; PMID:1588321
A:Accession: JQ1535
В
                                                                                                                                                                                                                                                                                                                                                                                           N;Alternate names: attachment protein C;Species: phocine distemper virus C;Date: 31-Dec:1993 #sequence_revision C;Accession: JQ1535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Title: The nucleotide sequence and deduced amino acid A;Reference number: JQ1368; MUID:92113538; PMID:1765768 A;Accession: JQ1369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hemagglutinin - phocine distemper virus
C;Species: phocine distemper virus
C;Date: 30-Sep-1992 #sequence_revision 30-Sep-1992 #text_change 16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GB:Z36979; NID:g536790;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: genomic RNA
A; Residues: 1-607 < KOV>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C;Accession: JQ1369
R;Koevamees, J.; Blixenkrone-Moeller, M.; Sharma, B.; Oervell, C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hemagglutinin -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches
                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gen. Virol.
 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             292 LASLCTKESTILLNLGDEESQNSVLVVI 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                 w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 IATLCTKXXXXVLDFGIDKXXXXLIQLI 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          œ
 LASCCTKESTILLNLGDEESQNSVLVVI
                               IATLCTKXXXXVLDFGIDKXXXXLIQLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GFIATLCTKXXXXVLDFGID 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTLANLCAKIAPWSIDFILD
                                                                     Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    phocine distemper virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2959-2966, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31,98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31.9%;
                                                                                     31.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9;
                                                                                     Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 44; DB
Pred. No. 9.4;
                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                 30
                                                                                                                                                                                                                                                                                                                                                                                                              31-Dec-1993 #text_change
319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PIDN:CAA85428.1; PID:g536791
                                                                                       DB 1;
9.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ulster/88)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>ب</u>
                                                                     11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8,
                                                                                                      Length 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 607;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 215;
                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Asn) (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    composition of the haemagglut
                                                                                                                                                                                                                                                                                                                                          virus:
                                                                                                                                                                                                                                                                                                                                          Gene
                                                                                                                                                                                                                                                                                                                                                                                                               09-Sep-1994
                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Norrby,
                                                                                                                                                                                                                                                                                                                                          order
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                        and
                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                          pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pred
```

```
C; Species: Cae
C; Date: 29-Oct
C; Accession: T
R; Tin-Wollam,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Cross-referen
A; Experimental :
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Note: A609L
C; Superfamily:
C; Keywords: ox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    probable UDPqlucose 6-dehydrogenase (EC 1.1.1.22) -
C:Species: Chlorella virus PBCV-1
C:Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #
C:Accession: T18111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A:Map position: 4
A:Introns: 73/3; 112/3; 137/1; 202/1
A:Introns: 73/3; 112/3; 137/1; 202/1
C:Superfamily: Caenorhabditis elegans hypothetical protein
                                                                                                                                                              syntaxin-binding protein n-Secl - rat C;Species: Rattus norvegicus (Norway rat) C;Date: 25-Aug-1995 *sequence_revision 25-Aug-199! C;Accession: A53455; A53487 R;Pevsner, J.; Hsu, S.C.; Scheller, R.H. Proc. Natl. Acad. Sci. U.S.A. 91, 1445-1449, 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary; translated from GB/EMBL/DDBJA;Molecule type: DNAA;Residues: 1-246 <TIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             submitted to the EMBL Data Library, December 1997 A;Description: The sequence of C. elegans cosmid C44B12 A;Reference number: Z21183
A;Molecule type: mRNA
A;Residues: 1-594 <PEV>
A;Cross-references: GB:L26264; NID:g459948; PIDN:AAA19246.1; PID:g459949
R;Garcia, E.P.; Gatti, E.; Butler, M.; Burton, J.; De Camilli, P.
                                                                                                        A;Title: n-Sec1: a neural-specific syntaxin-binding protein. A;Reference number: A53455; MUID:94151347; PMID:8108429 A;Accession: A53455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R:Graves, M.V.; Van Etten, submitted to the EMBL Data A; Reference number: Z18806 A; Accession: T18111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: EMBL:AF036692; PIDN:AAB88326.1; GSPDB:GN00022; CESP:C44B12. A;Experimental source: strain Bristol N2; clone C44B12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Reference number: A; Accession: T32510
                                                                                                                                                                                                                                                                                                                                                                     Вþ
                                                                                                                                                                                                                                                                                                                                                                                                      20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-389 <GRA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Status: preliminary; translated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Gene: CESP:C44B12.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;Species: Caenorhabditis elegans;Date: 29-Oct-1999 #sequence_rev
;Accession: T32510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genetics:
                                                                                        Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         œ
                                                                                                                                                                                                                                                                                                                                                                   10 GYVGTACAVLLAQKNEVIVLDISEDR-----VQLIKNK 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14 VLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                        GFIATLCT----KXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MIKFGIDKKWAQMISGIEEK 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                                               12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nces: EMBL:U42580;
source: specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GDPmannose dehydrogenase
                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #sequence_revision 29-Oct-1999 #text_change 04-Mar-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31.2%;
31.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             J.L.
Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NID:g4028896;
host Chlorella
                                                                                                                                                                                                                                                                                                                                                                                                                                               6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 43;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  мау
                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                            25-Aug-1995 #text_change 05-Nov-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ž
O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      φ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PIDN:AAC96945.1
strain NC64A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2
                                                                                                                                                                                                                                                                                                                                                                                                                                               10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 246;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chlorella virus PBCV-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C44B12.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                               10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                               2
```

```
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Decide type: DNA
A; Molecule type: DNA
A; Residues: 1-444 <STO>
A; Cross-references: GB: AE004454; GB: AE004091; NID: g9945990; PIDN: AAG03552.1; GSPDB: GN
A: Evnerimental source: strain PAO1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Accession: H83624
R;Stover, C.K.; Pham, X.O.; Erwin, A.L.; Mizoguchi, S.D.; adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        probable porin PA0162 [imported] - Pseudomonas aeru
C:Species: Pseudomonas aeruginosa
C:Date: 15-Sep-2000 *sequence_revision 15-Sep-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Proc. Natl. Acad. Sci. U.S.A. 91, 2003-2007, 1994
A;Title: A rat brain Sec1 homologue related to Rop and UNC18 interacts with syntaxin.
A;Reference number: A53487; MUID:94181519; PMID:8134339
A;Accession: A53487
A; Map position: C; Superfamily: }
                                                                                                                                                                                                                                                                                                   C;Species: Methanococcus Jannaschii
C;Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 13-Sep-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Gene: PA0162
C; Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Title: Complete genome sequence of Pseudomonas aeruginosa A;Reference number: A82950; MUID:20437337; PMID:10984043 A;Accession: H83624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C; Keywords: brain; membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: mRNA
A; Residues: 1-594 <GAR>
A; Cross-references: GB:U06069; NID:g458341;
                                                                              A; Molecule type: DNA
A; Residues: 1-498 <B
                                                                                                                                                                         A; Authors: Kaine, B.P.; Borodovsky, M.; Klenk, H.P.; Fraser, C.I.A; Title: Complete genome sequence of the methanogenic archaeon,
                                                                                                                                                                                                                rson, J.D.; Sadow, P.W.; Hanna, M.C.; Cotton, Science 273, 1058-1073, 1996
                                                                                                                                                                                                                                                      R; Bult, C.J.; White, O.; Reich, C.I.; Overbeek,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .; Lory, S.; Olson, M.V. Nature 406, 959-964, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Status: preliminary
                                                            A; Cross-references:
                                                                                                                 A; Status: preliminary;
                                                                                                                                   A; Accession: C64476
                                                                                                                                                           A; Reference number:
                                                                                                                                                                                                                                                                                             C; Accession: C64476
                                                                                                                                                                                                                                                                                                                                                     hypothetical
                                                                                                                                                                                                                                                                                                                                                                            C64476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local (
                                            Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 176 IATLCATLKEYPAVRYRGEYKDNALLAQLIQDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                       64 GFIATFQSGYTPGVVGFGVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GFIATLCTKXXXXVLDFGID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 IATLCT - - KXXXXVLDFGIDKXXXXLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                     protein MJ1412 - Methanococcus jannaschii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pseudomonas aeruginosa
  hypothetical
                        FOR1373212-1374708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                <BUL>
                                                                                                                                                           A64300;
                                                            GB:U67581; GB:L77117; NID:g1592052;
                                                                                                                                                                                                                                                                           o
;;
                                                                                                                 nucleic acid sequence not shown; translation
                                                                                                                                                                                                                                                      Olsen, G.J.; Zhou, L.; Fleischmann, R.D.; Sutton, G.G.; Bla R.; Kirkness, E.F.; Weinstock, K.G.; Merrick, J.M.; Glodek,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31.2%;
    protein
                                                                                                                                                           MUID:96337999; PMID:8688087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       trafficking
                                                                                                                                                                                                                                                                                                                                                                                                                                                       83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pseudomonas aeruginosa (strain
      MJ1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            outer membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DВ
16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \frac{\omega}{\omega}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DВ
14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PIDN: AAA17987.1; PID: g458342
                                                                                                                                                                                                                                    M.D.; Roberts,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hi, S.D.; Warrener, Folger, K.R.; Kas,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #text_change 15.Jun-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 444;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            porin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                            PID:g1592061;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PA0958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PA01,
                                                                                                                                                                         C.M.; Smith, H.O.;
on, Methanococcus j
                                                                                                                                                                                                                                    K.M.; Hurst,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P.; Hickey, M.J.;
A.; Larbig, K.; L
                                                                                                                     not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          opportunistic
                                                            TIGR: MJ1412;
                                                                                                                                                                                                                                        ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                           .; Woese
jannasc
                                                                                                                                                                                                                                                                           Blak
                                                            ΡI
```

Query Match

30.4%;

Score 42;

8

2

Length 498;

```
RESULT 14
D42510
                                                                                                                                                     8
Oll protein - vaccinia virus
C;Species: vaccinia virus
                                                                                                                       밁
                                                                                                                                                                               Query Match
Best Local Similarity
""thes 9; Conserve
                                                                                                                                                                                                                                                                      A:Gene: pyrF
C:Superfamily: hypothetical protein MJ0252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hypothetical protein pyrF [imported] - Sulfolobus solfataricus
C:Species: Sulfolobus solfataricus
C:Date: 24-May-2001 #sequence_revision 24-May-2001 #text_change 15-Jun-2001
C:Accession: H90208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ŷ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R:She, O.; Singh, R.K.; Confalonieri, F.; Zivanovic, Y.; Allard, G.; Awayez, M.J.;
Jong, Jeffries, A.C.; Kozera, C.J.; Medina, N.; Peng, X.; Thi-Ngoc, H.P.; Redd
Barnett, R.A.; Ragan, M.A.; Sensen, C.W.; Van der Oost, J.
submitted to GenBank, April 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C; Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Stover, C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas, L.L.; Lory, S.; Olson, M.V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  рь
                                                                                                                                                                                                                                                                                                                                     A;Cross-references: GB:AE006641; NID:g13813783;
                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-222 < KUR>
                                                                                                                                                                                                                                                                                                                                                                                             A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                               A;Reference number: A99139
A;Accession: H90208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Gene: mucD; PA0766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A: Experimental source: strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-474 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Title: Complete genome sequence of Pseudomonas aeruginosa PA01, an opportunistic patho
A;Reference number: A82950; MUID:20437337; PMID:10984043
A;Accession: F83550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .; Lory, S.; Olson, M.V.
Nature 406, 959-964, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Species: Pseudomonas aeruginosa
C;Date: 15-Sep_2000 #sequence_revision 15-Sep-2000 #text_change 03-Jun-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           serine proteinase MucD precursor PA0766 [imported] - Pseudomonas aeruginosa (strain PAO.C;Species: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Description: Sulfolobus solfatarious complete genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Accession:
                                                                                                                                                                                                                                                                                                                   Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cross-references: GB:AE004511; GB:AE004091; NID:g9946646; PIDN:AAG04155.1; GSPDB:GN00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          287 FGLDKPSGALVAQLVED 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  363 GLDKNKIIVIELFEDK 378
                                                                                                                     36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17 FGIDKXXXXLI-QLIED 32
                                                                                                                                                         14 VLDFGIDKXXXXLIQL 29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                     VLDLGVDKTRELLIGL 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Helicobacter serine proteinase
                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30.1%; 52.9%;
                                                                                                                                                                                                                  29.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50.0%;
                    (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. 18;
3; Mismatches
                                                                                                                                                                                                                  Score 41; DB
Pred. No. 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 41.5;
Pred. No. 21;
                    Copenhagen)
                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DΒ
                                                                                                                                                                                                                                                                                                                                     PIDN: AAK40927.1; GSPDB:GN00155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2
                                                                                                                                                                                               6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ģ
                                                                                                                                                                                                                                    Length 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 474;
                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P.; Hickey,
A.; Larbig,
                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Redder,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                M.J.;
K.; Li
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lim,
```

Search completed: May Job time: 26.2157 secs

9

2003,

16:18:44

```
R; Johnson, G.P.
submitted to GenBank, June 1990
A; Reference number: A33172
A; Accession: D42510
                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
T28491
밁
                                Š
                                                                                                                                          A;Cross-references: EMBL:L22579; NID:g623595; PIDN:AAA60801.1; A;Experimental source: strain Bangladesh-1975 C;Superfamily: variola major virus hypothetical protein QIL
                                                                                                                                                                                                A;Status: preliminary; translated from GB/EMBL/DDBJA;Molecule type: DNAA;Residues: 1-666 <MAS>
                                                                                                                                                                                                                                                  A;Title: Potential virulence determinants in terminal regions of variola smallpox vir A;Reference number: Z20488; MUID:94088747; PMID:8264798
A;Accession: T28491
                                                                                                                                                                                                                                                                                                                                                hypothetical protein OlL - variola major virus C;Species: variola major virus C;Date: 22-Oct-1999 #sequence_revision 22-Oct-1999 C;Accession: T28491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Thas 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-666 <JOH>
C;Superfamily: variola major virus hypothetical protein QIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A:Note: host Homo sapiens (man)
C;Date: 09-Nov-1990 #sequence_revision 09-Nov-1990 #text_change 20-Jun-2000
C;Accession: D42510
                                                                                                                                                                                                                                                                                                           R; Massung, R.F.; Esposito, J.J.; Liu, L.I.; Qi, J.; Utterback, T.R.; Knight, J.C.; Nature 366, 748-751, 1993
                                          Query Match
Best Local Similarity 51...
Conservative
129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  129 ATYLLKINAYMINFKIDLTVDEIIDLVKD
                                    4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4 ATLCTKXXXXVLDFGIDKXXXXLIQLIED 32
ATYLLKINAYMINFKIDLTVDEIIDLVKD
                              ATLCTKXXXXVLDFGIDKXXXXLIQLIED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29.7%;
                                                                                      29.7%;
                                                                                      Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 41;
Pred. No.
                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
157
                                  32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  157
                                                                                    ДВ
36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        36;
                                                                       14;
                                                                                                                                                                                                                                                                                                                                                                   #text_change 21-Jul-2000
                                                                                                       Length 666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 666
                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                              PID: 9438971
                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

P.

P03227 P06125 P03314 P1990 P71390 P715989 P17949 Q57655 P29518 Q9ka27 P08824

gallus gall drosophila methanococc

y genome y genome

gg

caenorhabdi epstein-bar

haemophilus

zea mays bacillus ricinus c

/s (m is ha

staphylococ

```
Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-851-422A-1
138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              112892 seqs, 41476328 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GFIATLCTKXXXXVLDFGIDKXXXXLIQLIEDKXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9, 2003, 16:08:20; Search time 11.9706 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenCore version 5.1.4_p5_4578 (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                            PLSX_VIBCH
Y111_METJA
LGR8_MOUSE
TP2B_CRILO
                                                                                                                                                                                                                                                 RUVC_ANASP
VHR2_SPVKA
VG33_HSVI1
                                                                                                                                                                                                                                                                                                       SYA_METKA
PYRF_SULSO
VOO1_VACCC
VOO1_VARV
ALA8_ARATH
     SPKA_SYNY3
HEMA_PHODV
                                                                                                 TRP1_CYACA
PPNK_METJA
                                                                                                                           RNFG_HAEIN
IP22_LYCES
YD58_SCHPO
                                                                                                                                                                  TP2B_HUMAN
                                                                                                                                                                                                                                                                                                                                                                         STB1_HUMAN
STB1_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                 PEPB_ENTHI
                               RGS9_BOVIN
                                                                                                                                                                                                                                                                                          TP2B_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                    PFPC_ENTHI
                                                                                                                                                                                                                                                                                                                                                                                                                                           PFPA_ENTHI
                                                        CISZ_YEAST
                                                                      NAP1_HUMAN
                                                                                      YZ28_METJA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   128.200 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   without alignments
                                                                                                                                                                                                                                                                                                                    Q24825
Q64320
Q64329
Q08599
Q8twy1
Q9ux10
P21093
P34010
                                                                                                                                                                                                                                                                                                                                                                                                                P34095
007831
024824
                   Q9pn86
Q9fab3
                                          091k90
064511
052751
P23333
P23333
Q9kgh4
Q9kgh4
Q91zz5
Q64293
Q64293
Q642131
P442131
Q43710
Q43710
Q58327
Q60287
Q60287
Q60287
Q60287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description
                                                                                                                         ) homo sapien
l gallus gall
l haemophilus
) lycopersico
l schizosacch
                                                                                                                                                                                                                                                                                                                                                                                                  entamoeba h
l entamoeba h
l entamoeba h
entamoeba h
    synechocyst
phocine dis
                                                                                                                                                                                                                                      vibrio chol
                                                                                                                                                                                                                                                              anabaena sp
swinepox vi
                                                                                                                                                                                                                                                                                         arabidopsis
mus musculu
                                                                                                                                                                                                                                                                                                                    vaccinia vi
variola vir
                                                                                                                                                                                                                                                                                                                                                sulfolobus
                                                                                                                                                                                                                                                                                                                                                           methanopyru
                                           saccharomyc
bos taurus
                                                                      methanococc
homo sapien
                                                                                                                                                                                                           mus musculu
                                                                                                                                                                                                                                                                                                                                                                         mus musculu
                                                                                                 methanococc
                                                                                                              cyanidium c
                                                                                                                                                                                              cricetulus
                                                                                                                                                                                                                        methanococc
                                                                                                                                                                                                                                                   ictalurid h
                                                                                                                                                                                                                                                                                                                                                                                      homo sapien
                                                                                                                                                                                                                                                                                                                                ٧į
     RESULT 1
PFPA_ENTHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PFPA_ENTHI STAN
P34095; Q24839;
Q1-FEB-1994 (Rel.
Q1-FEB-1994 (Rel.
16-OCT-2001 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-95231296; PubMed-7715451:
Leippe M., Andrae J., Nickel R., Tannich E., Mueller-Eberhard H.J.;
Leippe M., Andrae J., Nickel R., Tannich E., Mueller-Eberhard H.J.;
"Amoebapores, a family of membranolytic peptides from cytoplasmic
granules of Entamoeba histolytica: isolation, primary structure, and
pore formation in bacterial cytoplasmic membranes.";
Mol. Microbiol 14:895-904(1994)
-i- FUNCTION: FORMS PORES IN THE CYTOPLASMIC MEMBRANE OF HOST CELLS.
HAS ANTIHACTERIAL ACTIVITY AGAINST M.LUTEUS, NO ACTIVITY AGAINST
E.COLI. IMPLICATED IN THE CYTOLYTIC ACTIVITY OF THE PARASITE.
-i- SUBCELLULAR LOCATION: CYTOPLASMIC GRANULES.
-i- STMILARTTY: CONTAINS 1 SAPOSIN B-TYPE DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-FEB-1994 (Rel. 28, Created)
01-FEB-1994 (Rel. 28, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Pore-forming peptide ameobapore A precursor (EH-APP).
Entamoeba histolytica.
Entamoeba Entamoebidae; Entamoeba.
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Primary and secondary structure of the pore-forming peptide of pathogenic Entamoeba histolytica."; EMBO J. 11:3501-3506(1992).
                                                                                                                                                                                                                                STRAIN-HM-1:IMSS;
MEDLINE-95231296;
                                                                                                                                                                                                                                                                                       "Pore-forming peptide of pathogenic Entamoeba histolytica."; Proc. Natl. Acad. Sci. U.S.A. 88:7659-7663(1991).
                                                                                                                                                                                                                                                                                                                 Leippe M., Ebel S., Scl
Mueller-Eberhard H.J.;
                                                                                                                                                                                                                                                                                                                                                                                                  "Unusual gene organization in the protozoan parasite Entamoeba histolytica.";
                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-94099892; PubMed-8274224; Bruchhaus I., Leippe M., Lioutas C., Tannich E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-HM-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-HM-1: IMSS;
MEDLINE-93010939;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A., AND
                                                                                                                                                                                                                                                               PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                                                                                                             MEDLINE=91352048;
                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 22-46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Leippe M., Tannich E., Nickel R., van
Horstmann R.D., Mueller-Eberhard H.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=5759;
                                                                                                                                                                                                                                                                                                                                                                                   Cell Biol. 12:925-933(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          33333355
33333355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                             PubMed=1881907;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=1396552;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1128
1603
3411
3411
238
238
3137
155
436
464
495
                                                                                                                                                                                                                                                                                                                            Schoenberger O.L., Horstmann R.D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POLG_YEFV2
YD43_HAEIN
CA36_CHICK
TPC3_DROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HSLU_BACHD
RUBA_RICCO
PBP_STAAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Y202_METJA
BT1_MAIZE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNBI_EBV
VIT5_CAEEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POLG_YEFV1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R., van der Goot G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22-46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₿
```

Pattus

Result No.

Score

Match

Length

DB

Query

10 8

39

234773 234773 2473 25

43 41.5 41 41

765

Minimum DB Maximum DB

seq

length:

Total number

Scoring table:

BLOSUM62

Perfect score:

OM protein -

Copyright

on:

мау

Database

SwissProt_40:*

```
а
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SO FITTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local (
Query Match
Best Local Similarity
Matches 24; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Signal; Antibiotic.
SIGNAL 1
PEPTIDE 22
DISULFID 26
DISULFID 29
DISULFID 56
VARIANT 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                           PFPN_ENTHI
                                         CHAIN
DISULFID
DISULFID
DISULFID
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                              01-FEB-1995 (Rel. 31,
01-FEB-1995 (Rel. 31,
16-OCT-2001 (Rel. 40,
                                                                                                                                                                                                                                                                                                                                                                                                                                               007831;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID VARIANT
                                                                                             Signal.
                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics. Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL;
                                                                                                                   InterPro; IPROC
SMART; SM00118;
                                                                                                                                                                                                                                                                  Leippe M., Bahr E., Tannich E., Horstmann R.D.;
"Comparison of pore-forming peptides from pathogenic and
nonpathogenic Entamoeba histolytica.";
Mol. Biochem. Parasitol. 59:101-110(1993).
-i- FUNCTION: FORMS PORE IN THE MEMBRANE OF HOST TISSUES. IMPLICATED
IN THE CYTOLYTIC ACTIVITY OF THE PARASITE.
                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                           Nonpathogenic pore-forming peptide Entamoeba histolytica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR000004; S
SMART; SM00118; SAPB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIR; S25283; S25283.
PIR; A41279; A41279.
                                                                                                                                       EMBL; L04984; AAA18632.1; -.
                                                                                                                                                                                                                                                                                                                                  MEDLINE-93295428;
                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=5759;
                                                                                                                                                                                                                                                ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GFIATLCTKXXXXVLDFGIDKXXXXXLIQLIEDK 33
                                                                                                                                                                                                                                              SUBCELLULAR LOCATION: Cytoplasmic.
SIMILARITY: CONTAINS 1 SAPOSIN B-TYPE DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GFIATLCTK----VLDFGIDK----LIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            M83945; AAA29111.1;
X70851; CAA50203.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
25; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           an
                                                                                                                  IPR0000004; SapB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                    Entamoebidae; Entamoeba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98
 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                      55
28
25
25
25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş.
                                           AĄ:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                  PubMed-8515772;
                                           10432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10504
                                                                                                                                                                                                                                                                                                                                                     AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98
98
92
67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SapB
3; 1.
                                                      20
97
91
66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  73.9%;
           73.2%;
72.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                  Last
                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                             Last
                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 21-34.
                                           ¥
₹
                                                                                                                                                                                                                                                                                                                                                                                                                 sequence update)
Score 101; DE Pred. No. 1.26
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 102; DB pred. No. 7.7e 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                    NONPATHOGENIC P
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PORE-FORMING PEPTIDE AMEOBAPORE
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
L -> F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  F9592FDC1FAC7FFA
                                         AE171C58B86EE007
                                                                                                                                                                                                                                                                                                                                                                                                       ion update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
7.7e-12;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                85
            DB 1;
L.2e•11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₹
                                                                                    PORE-FORMING
                                                                                                                                                                                                                                                                                                                                                                                                         (APNP).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CRC64;
                                           CRC64;
                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
   Indels
                        97;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Þ
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
  2:
```

```
PFPB_ENTHI

ID PFPB_E

AC Q24824

DT Q1-NOV

DT 16-OCT

DE POTE-

CO EUKARY

OX NCBI_T

RN [1]

RP SEQUEN

RC STRAIN

RX LEIPPE

RT POTE-

RT POTE-

CC -!- SI

CC SI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                               ç,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
RRR OCC DETECTION
                                                                                                                                                                                                                                                                                              RESULT 4
                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                       PFPC_ENTHI STAN
Q24825;
Q1-NOV-1997 (Rel. 3
Q1-NOV-1997 (Rel. 3
16-OCT-2001 (Rel. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are not restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                           01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequenc
16-OCT-2001 (Rel. 40, Last annotat
Pore-forming peptide ameobapore C
Entamoeba histolytica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Leippe M., Andrae J., Nickel R., Tannich E., Mueller-Eberhard H.J.; "Amocbapores, a family of membranolytic peptides from cytoplasmic granules of Entamocba histolytics: isolation, primary structure, and pore formation in bacterial cytoplasmic membranes."; mol. Microbiol, 14:895-904(1994).

-i- EUNCTION: FORMS PORES IN THE CYTOPLASMIC MEMBRANE OF HOST CELLS.
-i- EUNCTION: FORMS PORES IN THE CYTOPLASMIC MEMBRANE OF HOST CELLS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1997
16-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            024824;
                                                            Eukaryota; Entamoebidae; NCBI_TaxID=5759;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=5759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Entamoeba histolytica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pore-forming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PFPB_ENTHI
                                                                                                                                                                                                                                                                         ENTHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; X76904; CAA54226.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entities requires a license agreement (Su or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-95231296;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-HM-1: IMSS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.,
                    SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR000004; SapB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                   59
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
les 14; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ...
                                                                                                                                                                                                                                                                                                                                                            HAS ANTIBACTERIAL ACTIVITY AGAINST M.LUTEUS, NO ACTIVITY AGAI E.COLI. IMPLICATED IN THE CYTOLYTIC ACTIVITY OF THE PARASITE. SUBCELLULAR LOCATION: CYTOPLASMIC GRANULES. SIMILARITY: CONTAINS 1 SAPOSIN B-TYPE DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GFIATLCTKXXXXVLDFGIDKXXXXLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SM00118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Antibiotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Entamoebidae; Entamoeba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      peptide ameobapore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20
24
27
54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA;
                       N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SAPB; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35, Last
40, Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed=7715451;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                35, Created)
35, Last seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96
96
96
96
                       AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45.78;
                                                                                                                                                         Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF
                       SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MW;
                                                                                        Entamoeba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence update) annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PORE-FORMING PEPTIDE A
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 63; DB
Pred. No. 0.00
7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99E6AFADB02B42CC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         precursor
                                                                                                                                    precursor (EH-APP).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20-63.
                                                                                                                                                                                                                                                    101
                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                                   82
                                                                                                                                                                                                                                                                                                                                                                                                           32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                ува;
у.00013;
3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1;
                                                                                                                                                                                                                                                      ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (EH-APP).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AMEOBAPORE
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
```

Ņ

Ç

1

```
STITE THE REPORT OF THE PRINCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STB1_HUMAN S
Q64320; Q62759;
Q1-NOV-1997 (Rel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Syntaxin binding protein 1 (Unc-18 homolog) (Unc-18A) (Unc-18-1) (N-
Secl) (rbSecl) (p67).
STXBD1 OR UNC18A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
DISULFID
DISULFID
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                    Bos taurus (Bovine).
Bos taurus (Bovine).
Eukaryota; Metazoa; Chordata;
Mammalla; Eutheria; Primates;
NCBI_TaxID=9606, 10116, 9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Ethe European Bioinformatics Institute. There are no restuse by non-profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         granules
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human), Rattus norvegicus (Rat),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        modified
                       Swanson D.A., Steel J.M., Valle D.;
"Identification and characterization
STXBP1, a protein implicated in vesion neurotransmitter release.";
                                                                                                                  MEDLINE=98207254; PubMed=9545644;
                                                                                                                                                                                                          "A murine neural-specific homolog caenorhabditis elegans unc-18 mutals. Neurosci. 16:6695-6702(1996).
                                                                                                                                                                                                                                                                           MEDLINE-96421662; PubMed-8824310;
Gengyo-Ando K., Kitayama H., Mukaida M.,
                                                                                                                                                                                                                                                                                                                        SPECIES-Human;
                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Signal; Antibiotic SIGNAL 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; X76904; CAA54225.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Amoebapores, a family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    eddie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=95231296; PubMed=7715451;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ú
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GFIATLCTKXXXXVLDFGIDKXXXXLIQ 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ippe M., Andrae J., Nickel R., Tannich E., Mueller-Eberhard H.J.;
noebapores, a family of membranolytic peptides from cytoplasmic
nules of Entamoeba histolytica: isolation, primary structure, and
re formation in bacterial cytoplasmic membranes.";
Microbiol. 14:895-904(1994).
FUNCTION: FORMS PORES IN THE CYTOPLASMIC MEMBRANE OF HOST CELLS.
HAS ANTIBACTERIAL ACTIVITY AGAINST M.LUTEUS, NO ACTIVITY AGAINST
E.COLI. IMPLICATED IN THE CYTOLYTIC ACTIVITY OF THE PARASITE.
SUBCELLULAR LOCATION: CYTOPLASMIC GRANULES.
SIMILARITY: CONTAINS 1 SAPOSIN B-TYPE DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GLVETLCTK----IVSYGIDKLIEKILE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SM00118; SAPB; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
10; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   non-profit institutions as long as its content is in no way id and this statement is not removed. Usage by and for commercial is requires a license agreement (See http://www.isb-sib.ch/announce/ an email to license@isb-sib.ch).
                                                                                                                                                                FROM
    48:373-376(1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IPR000004; SapB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    101 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25
29
59
                                                                                                                                                                Ν.Α.,
                                                                                                                                                                                                                                                                                                                           TISSUE=Brain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    028208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24
101
101
95
70
                                                                                                                                                                AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10855 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 39.1%;
35.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .7%
                                                                                                                                                                ALTERNATIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PORE-FORMING I
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 54; DB 1;
Pred. No. 0.0064;
                                                  in vesicle
                                                                                                                                                                                                                                  mutants
                                                                                                                                                                                                                                                                                                                                                                                                                   Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY.
SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28AC72135E73499B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                        corrects
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 87
                                                                                                                                                                SPLICING
                                                                       of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 594
                                               the human ortholog 
trafficking and
                                                                                                                                                                                                                                                                             Ikawa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                     Hominidae;
                                                                                                                                                                                                                                                     cholinergic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7;
                                                                                                                                                                                                                                                                                  ×
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AMEOBAPORE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        through a collaboration -
d the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                         Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       101;
                                                                                                                                                                                                                                                        defects
                                                                     of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                        ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1;
```

```
"Bovine chromaffin cell muncl8-1 cDNA deduced amino acid sequence is identical to that of rat muncl8-1."
Submitted (MAY-1999) to the EMBL/GenBank/DDBJ databases.

1- FUNCTION: MAY PARTICIPATE IN THE REGULATION OF SYNAPTIC VESICLE DOCKING AND FUSION, POSSIBLY THROUGH INTERACTION WITH GTP-BINDING PROTEINS. ESSENTIAL FOR NEUTOTRANSMISSION AND BINDS SYNTAXIN, A COMPONENT OF THE SYNAPTIC VESICLE FUSION MACHINERY PROBABLY IN A 1:1 RATIO. CAN INTERACT WITH SYNTAXINS 1, 2, AND 3 BUT NOT SYNTAXIN 4 MAY PLAY A ROLE IN DETERMINING THE SPECIFICITY OF INTERACELLULAR FUSION REACTIONS.
                                       This
                                                                                                                                                                                                                                                                                                                                                                                         "Molecular characterization of a n
stimulates the activity of Cdk5.";
J. Neurochem. 64:1988-1995(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SPECIES=Rat; TISSUE=Brain cortex;
MEDLINE=94151347; PubMed=8108429;
Pevsner J., Hsu S.-C., Scheller R.H.;
"n-Secl: a neural-specific syntaxin-binding protein.";
Proc. Natl. Acad. Sci. U.S.A. 91:1445-1449(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A., AND PARTIAL SEQUEN
SPECIES-Rat, and Bovine; TISSUE-Brain;
MEDLINE-94067319; PubMed-8247129;
                                                                                                                                                                                                                                                                                                                                    Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPECIES=Rat; TISSUE~Brain; MEDLINE=95239157; PubMed=7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Garcia E.P., McPherson P.S., Chilcote T.J., Takei K., "rbSec1A and B colocalize with syntaxin I and SNAP-25 axon, but are not in a stable complex with syntaxin."; J. Cell Biol. 129:105-120(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SPECIES=Rat; STRAIN=Sprague-Dawley; TISSUE=Brain;
MEDLINE=95213277; PubMed=7698978;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SPECIES=Rat; TISSUE=Brain; MEDLINE-94181519; PubMed=8134339; Garcia E.P., Gatti E., Butler M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SPECIES=Human; TISSUE=Skin;
Strausberg R.;
                                                                                                                                                                                                                                                                                                                                                SPECIES-Bovine;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Pant H.C., Beushausen S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shetty K.T., Kaech S., Link W.T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A., AND ALTERNATIVE SPLICING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   syntaxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Garcia E.P.,
"A rat brain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nature 366:347-351(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hata Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A
                          between
                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Proc. Natl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Synaptic
                                                                                                                                     SUBCELLULAR LOCATION: CYTOPLASMIC ALTERNATIVE PRODUCTS: 2 isoforms; produced by alternative splicing TISSUE SPECIFICITY: BRAIN AND SPIN
                                                                 POSTNATAL DAY 7.
SIMILARITY: BELONGS TO THE
                                                                                             DEVELOPMENTAL
14, WITH LEVEL
                                                                                                                                                                                                                                                                                                                                    G. -T
                     SWISS-PROT entry is copyright. It is produced through a cen the Swiss Institute of Bioinformatics and the EMBL
                                                                                             WITH LEVELS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Slaughter C.A.,
                                                                                                                                                                                                                                                                                                                                    ., Gillis K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              vesicle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (OCT-2001) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Acad.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sec1 homologue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N.A.
                                                                                                                                                                                                                                                                                                                                                  TISSUE-Adrenal medulla;
                                                                                             LS RISING
                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed=7536802;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sci. U.S.A. 91:2003-2007(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            fusion complex contains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Butler M., Burton logue related to Ro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PARTIAL SEQUENCE.
                                                                                             FAINT LEVELS
NG AT LATER EM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Suedhof
             Institute.
                                                                 STXBP/UNC-18/SEC1 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            T.C.
                                                                                                                                                                                                                                                                                                                                                                                                                     neuronal-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Jaffe H.,
                                                                                                                                      SPINAL CORD.
                                                                                             EMBRYONIC
                                                                                                          ARE
                                                                                                                                                                  1/A
                                                                                                                                                                              AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ٠
;
                                                                                             DETECTABLE
ONIC AGES AN
                                                                                                                                                               MEMBRANE-ASSOCIATED. (shown here) and 2/BE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unc-18 homologue bound to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Flores C.M., Wray S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               de Camilli P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               UNC18
                                                                                                                                      HIGHLY ENRICHED
                                                                                             AND I
                                                                                                                                                                                                                                                                                                                                                                                                                      protein that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 interacts with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    throughout the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                de
                                                                                             PEAKING AT
                                                                                               PEAKING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Camilli
                          a collaboration •
                                                                                                                                                                  are
                                                                                                          DAY
        9
```

the

European

Bioinformatics

institutions

as long

There are

ņ content

restrictions

S Ħ

5

```
RESULT
STB1_MC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; D63851; BAA19483.1;
EMBL; AF004562; AAC39688 1;
EMBL; BC015749; AAH5749.1;
EMBL; L26087; AAB41113.1;
EMBL; L26088; AAB41112.1;
EMBL; L26264; AAA19246.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1997
01-NOV-1997
                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                     yNuan
STXBP1.
Mus musculus (Mouse).
Mus musculus (Mouse).
Metazoa; Chordata; Metazoa; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               modified
entities
or send a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
SEQUENCE
                             EMBL;
                                                                                                                                                                                                                                                                                                          "A murine neural-specific homolog corrects cholinergic defects Caenorhabditis elegans unc-18 mutants.";
J. Neurosci. 16:6695-6702(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STB1_MOUSE
008599;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; U06069; AAA17987.1; -. EMBL; U21116; AAA96350.1; -. EMBL; AF153327; AAD37018.1; -.
                                                                                                                                                                                                                                                                                                                                                          Gengyo-Ando K., Kitayama H., Mukaida M.,
                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-96421662;
                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-C57BL/6; TISSUE-Brain;
                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR001619; Sec1-like Pfam; PF00995; Sec1; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MIM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1997 (Rel. 35, Creat
01-NOV-1997 (Rel. 35, Last
15-JUN-2002 (Rel. 41, Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     176 IATLCATLKEYPAVRYRGEYKDNALLAQLIQDK 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                               FUNCTION: MAY PARTICIPATE IN THE REGULATION OF SYNAPTIC VESICLE DOCKING AND FUSION, POSSIBLY THROUGH INTERACTION WITH GTP-BINDING PROTEINS. ESSENTIAL FOR REUROTRANSMISSION AND BINDS SYNTAXIN, A COMPONENT OF THE SYNAPTIC VESICLE FUSION MACHINERY PROBABLY IN A 1:1 RATIO. CAN INTERACT WITH SYNTAXINS 1, 2, AND 3 BUT NOT SYNTAXIN 4. MAY PLAY A ROLE IN DETERMINING THE SPECIFICITY OF INTRACELULAR FUSION REACTIONS (BY SIMILARITY).

SYMILARITY: BELONGS TO THE STXBP/UNC-18/SEC1 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 IATLCT--KXXXXVLDFGIDKXXXXLIQLIEDK 33
            #GI:107363; SAA19479.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          602926; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AF004562; AAC39688.1; -. BC015749; AAH15749.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   L26264; AAA19246.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                L26087; AAB41113.1; -. L26088; AAB41112.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HGNC:11444; STXBP1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d and this statement is not removed. Usage by and for commercial s requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           transport; Alternative splicing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              291
594 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 35, Last sequence update)
. 41, Last annotation update)
protein i (Unc-18 homolog) (Unc-18A) (Unc-18-1).
                                                                                                                                                                                                                                                                                                                                                                           PubMed-8824310;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              291 L
67568 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OKLLDTLKKLNKTDEEISS -> TKFLMDLRHPDFRESSRV
SFEDQAPTME (IN ISOFOM 2).
L -> V (IN REF. 4; AAB41112).
; 2DD0715F875CE0F3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 43; DB Pred. No. 4.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            594
                                                                                                                                                                                                                                                                                                                                                          Ikawa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15;
                                                                                                                                                                                                                                                                                                                                                          ۲
: .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 594;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                            'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۲
```

7

ā

PYRF_ ID AC AC DT DT DT DT

Q9UX10; 15-JUN-2002 15-JUN-2002 15-JUN-2002

(Rel. 41, Created)
(Rel. 41, Last sequence update)
(Rel. 41, Last annotation updat.)
(Phosphate decarboxylase (EC 4.)

n update) (EC 4.1.

4.1.1

.23) (OMP

decarboxylase)

Orotidine

_SULSO PYRF_SULSO

STANDARD;

PRT;

222

⋛

```
RESULT 7

SYA_METKA, 1

ID SYA_METKA, 1

AC 08TWY

AC 08TWY

AC 08TWY

AC 15-JU

DT 15-JU

DT 15-JU

DT 15-JU

DT 15-JU

DT 15-JU

DT 15-JU

RN 1[1]

RN 1[1]

RN CELL

RN MEDLI

                                                                                В
                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SORR
RESULT
                                                                                                                                                                                            Query Match
Best Local S
Matches S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SYA_METKA

OBTMYI;

15-JUN-2002 (Rel. 41, Created 15-JUN-2002 (Rel. 41, Last se 15-JUN-2002 (Rel. 41, Last ar synthetase (EC 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                         EMBL; AEO PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the European Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as icontent is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Natale D.A., Rogozin I.B., Tatusov R.L., Wolf Y.I., Stetter K.O., Malykh A.G., Koonin E.V., Kozyavkin S.A.;
"The complete genome of hyperthermophile and monophyly of archaeal methanogens.",
Proc. Natl. Acad. Sci. U.S.A. 99:4644-4649(2002).
-!- CATALYTIC ACTIVITY: ATP + L-alanine + tRNA(Ala) = AMP + diphosphate + L-alanyl-ERNA(Ala).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.

STRAIN-AV19 / DSM 6324 / JCM 9639;

MEDLINE-21927647; PubMed-11930014;

Slesarev A.I., Mezhevaya K.V., Makarova K.S., Polushin Shekerbinina O.V., Shakhova V.V., Belova G.I., Aravind Shekerbinina O.V., Shakhova V.V., Belova G.I., Aravind
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00995; Sec1; Protein transport.
                                                                                                                                                                                                                                                                                                                                                            Aminoacyl-tRNA synthetase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Methanopyrus kandleri.
Archaea; Euryarchaeota; Methanopyri; Methanopyrales; Methanopyraceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -

    -!- SUBCELLULAR LOCATION: Cytoplasmic.

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=2320;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ALAS OR MK0900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -!- SIMILARITY: BELONGS TO CLASS-II AMINOACYL-TRNA SYNTHETASE FAMILY.
                                                                                    355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          176 IATLCATLKEYPAVRYRGEYKDNALLAQLIQDK
                                                                                                                                  1 GFIATLCTKXXXXVLDFGIDKXXXXLIQLIE 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IATLCT--KXXXXVLDFGIDKXXXXLIQLIEDK
                                                                                 GYLARLVIRRALRLLD-GLDAEREYLLEVVE
                                                                                                                                                                                                                                                                                                                                                      AE010379; AAM02113.1; ALT_INIT.
TE; PS50860; AA_TRNA_LIGASE_II_ALA; 1.
acyl-trnA synthetase; Protein biosynthesis; Ligase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l Similarity
15; Conserv
                                                                                                                                                                                            Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                          proteome.
915 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    594 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                          103908 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67701 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31.2%;
                                                                                                                                                                                                                      30.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence update)
annotation update)
6.1.1.7) (Alanine--tRNA ligase) (AlaRS).
                                                                                                                                                                                            9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 43; DB pred. No. 4.2;
                                                                                                                                                                                                                   Score 41.5;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63E7628E15B3E847 CRC64;
                                                                                                                                                                                                                                                                                                       6DD88BA1939CB4EE
                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             208
                                                                                                                                                                                                                      12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 1;
                                                                                                                                                                                                                                                DB 1;
                                                                                                                                                                                            12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 594;
                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                          CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    I.,
                                                                                                                                                                                                                                                   915;
                                                                                                                                                                                                                                                                                                                                                            ATP-binding;
                                                                                                                                                                                            1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                            ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1:
```

ζ

1

```
RESULT 9
 GERRAR
                                                                                                                                                             γ
                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                            Matches
                      VO01_VACCC
P21093;
01-FEB-1991
01-FEB-1991
16-OCT-2001
Protein Oll.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lyase; Do
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-ATCC 35092 / DSM 1617 / P2;
MEDLINE-21332296; PubMed-11427726;
She O., Singh R.K., Comfol-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Charlebois R.L., Singh R.K., Chan Weiher C.C.-Y., Allard G., Ch Confalonieri F., Curtis B., Duguet M., Erauso G., Faguy D., Gaasterland T., Garrett R.A., Gordon P., Jeffries A.C., Kozera Kushwaha N., Lafleur E., Medina N., Peng X., Penny S.L., She Q. St Jean A., van der Oost J., Young F., Zivanovic Y., Doolittle Ragan M.A., Sensen C.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        De Moors A., Erauso G., Fletcher C., Gordon P.M.K.,
Heikamp-de Jong I., Jeffries A.C., Kozera C.J., Medina N., Peng
Thi Ngoc H.P., Redder P., Schenk M.E., Theriault C., Tolstrup N.
Charlebois R.L., Doolittle W.F., Duguet M., Gaasterland T.,
Garrett R.A., Ragan M.A., Sensen C.W., Van der Oost J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Gene content and organization of a 281-kbp contig from the genome the extremely thermophilic archaeon, Sulfolobus solfataricus P2."; Genome 43:116-136(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (OMPDCase) (OMPdecase).
PYRF OR SSO0616 OR C08_0
Sulfolobus solfataricus
                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                    PROSITE;
                                                                                                                                                                                                                                                                                                 Pfam; PF00215;
                                                                                                                                                                                                                                                                                                                                    EMBL; AE006690; AAK40927.1;
                                                                                                                                                                                                                                                                                                                                                EMBL; Y18930; CAB57684.1; -.
                                                                                                                                                                                                                                                                                                                                                                          or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                         entities requires a
                                                                                                                                                                                                                                                                                                                                                                                                 use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       She O., Singh R.K., Confalonieri F., Zivanovic Awayez M.J., Chan-Weiher C.C.-Y., Clausen I.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN=ATCC 35092 / DSM 1617 / P2;
MEDLINE=20165948; PubMed=10701121;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Archaea; Crenarchaeota; Thermoprotei; Sulfolobales; Sulfolobaceae;
                                                                                                                                                                                                                                                                                                             [nterPro;
                                                                                                                                          36
                                                                                                                                                                 14
                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                          s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                 VLDFGIDKXXXXLIQL 29
                                                                                                                                        VLDLGVDKTRELLIGL
                                                                                                                                                                                                                                                                                                                        026232;
                                                                                                                                                                                                                                                                     Decarboxylase;
            ဌ
                                                                                                                                                                                             Similarity
9; Conser
                                                                                                                                                                                                                                                                                00215; OMPdecase; 1.
PS00156; OMPDECASE; FALSE_NEG.
                                                                                                                                                                                                                                                                                                            IPR001754; OMPdecase.
                                                                                                                                                                                                                                              222
                        (Rel.
(Rel.
(Rel.
                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                              ΑA;
                                                                           STANDARD;
                        17,
17,
40,
                                                                                                                                                                                                                                             61 F
24701 MW;
                                                                                                                                                                                                                                                                                                                                                                                  tatement is not removed. Usage by and for license agreement (See http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                                                                                              ormatics Institute. There are no restrictions institutions as long as its content is in
                                                                                                                                                                                                        29.7%;
56.2%;
                                                                                                                                                                                                                                          Pyrimidine biosynthesis; Complete p
1 proton DONOR (BY SIMILARITY)
4701 MW; 48F3E83DB0F043FF CRC64;
                                   Created)
Last seq
                                                                                                                                          51
                      Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             034
                                                                                                                                                                                           Score 41;
Pred. No.
                                                                           PRT;
                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Zivanovic Y.,
                                                                          666
                                                                                                                                                                                                       3.6;
                                                                                                                                                                                                                   DΒ
                                                                          Ą
                                                                                                                                                                                                                    ب
                                                                                                                                                                                           6,
                                                                                                                                                                                                                  Length 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Curtis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       , Allard G.
urtis B.A.,
                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                     proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     G.,
                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                    for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chow C.,
                                                                                                                                                                                                                                                                                                                                                                                      .ch/announce,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           С.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    W.F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ×
                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of
                                                                                                                                                                                                                                                                                                                                                                                                                no
                                                                                                                                                                                                                                                                                                                                                                                                              way
                                                                                                                                                                                           0
```

```
RESULT 10
VO01_VARV
ID VO01_VARV
  Вþ
                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN-India-1967
MEDLINE-94152154;
  This
                                                                                                                Sandakhchiev L.S.; "Analysis of the nucleotide sequence of a 43 genome of variola virus India-1967 strain."; Virus Res. 30:239-258(1993).
                                                                                                                                                                                                                                  Variola virus.
Viruses; dsDNA viruses,
                                                                                                                                                                                                                                                                                                   P34010;
01-FEB-1994
                    protective mechanisms.";
FEBS Lett. 319:80-83(1993).
-!- SIMILARITY: BELONGS TO THE POXVIRUSES
                                                     "Genes of variola
                                                                       STRAIN-India-1967 MEDLINE-93202281;
                                                                                                                                                             Shchelkunov S.N.,
                                                                                                                                                                                                                             Orthopoxvirus
                                                                                                                                                                                                                                                          OIL OR QIL
                                                                                                                                                                                                                                                                      Protein 01.
                                                                                                                                                                                                                                                                               01-FEB-1994
01-JUN-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; M35027; AAA48053.1; -. PIR; D42510; D42510.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              between the Swiss Institute of Bioinformat
the European Bioinformatics Institute. The
use by non-profit institutions as long
modified and this statement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Appendix to 'The complete DNA sequence of vaccinia Virology 179:517-563(1990).
-!- SIMILARITY: BELONGS TO THE POXVIRUSES O1 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Goebel S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Virology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Orthopoxvirus
                                                                                                COMPLETE
                                                                                                                                                                                                                NCBI_TaxID=10255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Paoletti E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPLETE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Paoletti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Goebel S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vaccinia
                                                                                                                                                                                                                                                                                                                                                                              129
                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                   4
  SWISS-PROT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complete DNA
                                                                                                                                                                                                                                                                                                                                                                                           ATLCTKXXXXVLDFGIDKXXXXLIQLIED 32
                                                                                                                                                                                                                                                                                                                                                                              ATYLLKINAYMINFKIDLTVDEIIDLVKD
                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    dsDNA viruses,
                                                                                                GENOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      179:247-266(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 666 AA;
                                                                                                                                                                                                                                                                               (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Johnson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Johnson G.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (strain Copenhagen).
                                                                                                                                                                                                                                                                                                                         STANDARD;
entry is copyright.
                                                   7. / Isolate Ind3;
; PubMed=8384129;
, Blinov V.M., San
a and vaccinia vir
                                                                                                                                                          7 / Isolate Ind3;
; PubMed=8109158;
, Blinov V.M., Res
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PubMed-2219722;
son G.P., Perkus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence of vaccinia
                                                                                                                                                                                                                                                                               28,
29,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 77577 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                29.7%;
                                                                                                                                                                                                                                                                               Last
Last
                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                                                                                                      по
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     no RNA stage; Poxviridae; Chordopoxvirinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Perkus M.E., Davis S.W.,
                                                                                                                                                                                                                                                                               sequence up
annotation
                                                                                                                                                                                                                                      RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Perkus
                                                                                                                                                                                                                                                                                                                                                                                                                       6.
                                                                                                                                                                                                                                                                                                                                                                                                                      Score 41; DB Pred. No. 11; 6; Mismatches
                                                                                                                                                                                                                                                                                                                         PRT;
                                                    Sandakhchiev
viruses nece
                                                                                                                                                             Resenchuk S.M.,
                                                                                                                                                                                                                                      stage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 46DF3299DDEB66EF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Μ.Ε.,
 Ë
                                                                                                                                                                                                                                                                                        update)
                                                                                                                                                                                                                                                                                                                         666
                                                                                                                                                                                                                                      Poxviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                . 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  virus.";
 S
                                                    hiev L.S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Davis
                                                                                                                                                                                                                                                                                                                         B
produced
                     O1 FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                       14;
                                                                                                                                       kbp segment of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S.W.,
                                                                                                                                                             Totmenin A.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 666;
                                                     ç
                                                                                                                                                                                                                                      Chordopoxvirinae;
                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
through a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Winslow J.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               γd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  virus'.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Winslow
                                                     overcome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tor
                                                                                                                                                                                                                                                                                                                                                                                                                       0;
 collaboration
                                                     the
                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                commercia
                                                     host
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ALA8_ARA
Q9LK90;
                                                                                                                                                                                                                    use by non-profit institutions as long modified and this statement is not removed. entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=20363099; PubMed=10907853;
Kaneko T., Katoh T., Sato S., Nakamura A., Asamizu E.,
"Structural analysis of Arabidopsis thaliana chromosome
Sequence features of the 4,251,695 bp regions covered t
and BAC clones.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Arabidopsis thaliana (Mouse-ear cress).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16-OCT-2001 (Rel. 40, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Potential phospholipid-transporting ATPase 8
(Aminophospholipid flippase 8).
ALA8 OR AT3G27870 OR K16N12.9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and for con entities requires a license agreement (See http://www.isb-sib.ch/aror send an email to license@isb-sib.ch).
                                                                                                                                      Pfam; PF00702; Hydrolase; 1. PRINTS; PR00119; CATATPASE.
                                                                                                                                                                InterPro; IPR001757; ATPase_E1-E2.
InterPro; IPR001454; Hlgnase/hydrlase
                                                                                                                                                                                                                                                                                                                                                                                            - DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ARATH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; X6919B; CAA48994.1; -. PIR; F36842; F36842.
 DOMAIN
                                                                   TRANSMEM
                                                                                                                          PROSITE;
                                                                                                                                                                                             EMBL; AP000371; BAB02533.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-CV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=3702;
                                       TRANSMEM
                                                      DOMAIN
                                                                                               Magnesium;
                                                                                                            Hydrolase;
                            NIVMOC
                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-OCT-2001
16-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        129 ATYLLKINAYMINFKIDLTVDEIIDLVKD
             RANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ۵
                                                                                                                                                                                                                                                                          s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                  FUNCTION: INVOLVED IN TRANSPORT OF PHOSPHOLIPIDS (POTENTIAL) CATALYTIC ACTIVITY: ATP + H(2)O = ADP + phosphate. SUBCELLULAR LOCATION: Integral membrane protein. SIMILARITY: BELONGS TO THE CATION TRANSPORT ATPASES FAMILY (E1-E2 ATPASES). SUBFAMILY IV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATLCTKXXXXVLDFGIDKXXXXLIQLIED 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ARATH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
9; Conser
                                                                                                                         PS00154; ATPASE_E1_E2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                         7:217-221(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    666
                                                                                              Multigene
                                                                                                            Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COlumbia;
 1
72
94
121
121
300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ξ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
 71
93
97
120
299
321
358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  77305 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29.7%;
                                                                                            family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
                                                                                                           Phosphorylation; ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 41;
Pred. No.
                          CYTOPLASMIC (POTENTIAL)
                                       EXTRACELLULAR POTENTIAL.
                                                                               CYTOPLASMIC
EXTRACELLULAR
              POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    F9E9192C93A6BAAF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1189
                                                                                                                                                                                                                                                             There are no restrictions ong as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA
                                                     (POTENTIAL)
                                                                                                                                                                                                                                     http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1; Length 666
                                                                                                                                                                                                                                                   Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                   γď
                                                                                                                                                                                                                                                                                                                                                                                                                                   bγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tabata S.;
                                                                                                                                                                                                                                                    and
                                                                                                           Metal-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                    90
                                                                                                                                                                                                                                                    for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                    P1, TAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TP2B_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O 11111111111111111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
EMBL; D38046; BAA07236.1; -.
HSSP; P06786; 1BGW.
MGD; MGI:98791; Top2b.
InterPro; IPR003594; ATPbind_ATPase.
InterPro; IPR00357; CBFA_NFYB_topis.
InterPro; IPR001241; DNA_topoisoII.
InterPro; IPR002205; DNA_topoisoIV.
                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.

STRAIN-BALB/C; TISSUE-Brain;
Mlyaike M., Adachi N., Kikuchi A.;
Submitted (SEP-1994) to the EMBL/GenBank/DDBJ databases.

-!- FUNCTION: CONTROL OF TOPOLOGICAL STATES OF DNA BY TRANSIENT
BREAKAGE AND SUBSEQUENT REJOINING OF DNA STRANDS. TOPOISOMERASE I.

MAKES DOUBLE-STRAND BREAKS.

-!- CATALYTIC ACTIVITY: ATP-dependent breakage, passage and rejoining
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                 This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           METAL
METAL
                                                                                             entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                   use by non-profit institutions as long modified and this statement is not removed
                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA topoisomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TP2B_MOUSE
Q64511;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                          TOP2B
                                                                                                                                                                                                                                                                                                                                                                                                                                              15-JUL-1998 (Rel.
15-JUL-1998 (Rel.
15-JUN-2002 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      670 TLVTEDRDALIDAAADKIEKDLILLGSTAVEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ç
                                                                                                                                                                                  SUBCELLALAR LOCATION: Nuclear; nucleolar: MISCELLANEOUS: EUKARYOTIC TOPOISOMERASE I AND II CAN REL NEGATIVE AND POSTITIVE SUPERCOILS; WHEREAS PROKARYOTIC EN RELAX ONLY NEGATIVE SUPERCOILS.
SIMILARITY: BELONGS TO THE TYPE II TOPOISOMERASE FAMILY.
                                                                                                                            European Bioinformatics Institute. The by non-profit institutions as long
                                                                                                                                                                                                                                                of double-stranded DNA.
SUBUNIT: HOMODIMER (BY SIMILARITY).
                                                                                                                                                        SWISS-PROT entry is copyright. It is produced through a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TLCTKXXXXVLDFGIDKXXXXLIQL----IEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l Similarity
12; Conser
                                                                                                                                         the Swiss Institute of Bioinformatics and pean Bioinformatics Institute. There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                359
379
921
921
955
975
1008
1008
1004
1107
11091
11091
1138
8669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>۸</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                    36,
41,
11,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1004
1027
1040
1063
1069
1090
1107
11132
11189
424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                135309
                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation updat
beta isozyme (EC 5.99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MAGNESIUM
MAGNESIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CYTOPLASMIC (POTENTIAL).
PHOSPHORYLATION (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL.
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DCF951CF3FC55E83 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
20
.
                                                                                                                                                                                                                                                                                                                                                                                                                                    ion update)
(EC 5.99.1.3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \omega
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (BY SIMILARITY). (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL).
                                                                                                                             as
                                                                                                       http://www.isb-sib
                                                                                                                   Usage
                                                                                                                              its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1189
                                                                                                                                          no restrictions
                                                                                                                                                     the
                                                                                                                     and
                                                                                                                                                       EMBL
                                                                                                                                                                                                                          RELAX
                                                                                                                                                                                                              RELAX BOTH
                                                                                                                      for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.
                                                                                                                                                                                                                                                                                                                                                                                        Mus.
                                                                                                          .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.
```

*

```
RESULT 13
RUVC_ANASI
   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _ANASP
RUVC_ANASP
052751;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Crossover junction endodeoxyribonuclease ruvC (EC 3.1.22.4) (Holliday junction unclease ruvC).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NP_BIND
ACT_SITE
                                                            the
                                                                                         This
                                                                                                                                                                                                                                                                                           Yasuda M., Tabata S.;
"Complete genomic sequence of the feromonacterium Anabaena sp. strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProDom; PD000616; DNA_topoisoII; 1.
ProDom; PD000742; DNA_topoisoIV; 1.
SMART; SM00433; TOP2c; 1.
SMART; SM00434; TOP4c; 1.
SMART; SM000177; TOPOISOMERASE_II; 1.
PROSITE; PS00177; TOPOISOMERASE_II; 1.
STOPOISOMERASE_II; 1.
ATP (POTENTIAL).

NP_BIND 170 175
ATP (POTENTIAL).
use by non-profit institutions as long modified and this statement is not removed: entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                           Kishida Y., Kohara M., Matsumoto
Nakazaki N., Shimpo S., Sugimoto
                                                                                                                                                                                                                                                                                                                                                                                         Kaneko T., Nakamura
                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  WEDLINE=99011350; PubMed=9794762; Yoon H.-S., Golden J.W.; "Heterocyst pattern formation conscience 282:935-938(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A. MEDLINE-99011350;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Cyanobacteria;
NCBI_TaxID=103690;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Anabaena sp. (strain PCC Bacteria; Cyanobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRINTS; PR00615; CCAATSUBUNTA. PRINTS; PR00418; TPI2FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00204; DNA_gyraseB; 1.
Pfam; PF00521; DNA_topoisoIV;
Pfam; PF02518; HATPase_c; 1.
                                                                                                                                                                                                                                                                                                                                                                          Watanabe A.,
                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=21595285;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 FIATLCTKXXXXVLDFGIDKXXXXLIQLIEDK
                                                                                                                                                                                                        IN GENETIC RECOMBINATION. CLEAVES THE CRUCIFORM STRUCTURE IN SUPERCOILED DNA BY NICKING TO STRANDS WITH THE SAME POLARITY AT SITES SYMMETRICALLY OPPOSED AT THE JUNCTION IN THE HOMOLOGOUS ARMS AND LEAVES A 5'TERMINAL PHOSPHATE AND A 3'TERMINAL HYDROXYL GROUP
                                                       European Bioinformatics Institute.
                                                                                                                      SIMILARITY: BELONGS TO THE RUVC
                                                                                                                                   duplexes (Holliday junction). COFACTOR: Binds 1 magnesium i
                                                                                                                                                                a reciprocal single-stranded crossover
                                                                                                                                                                              CATALYTIC ACTIVITY: Endonucleolytic
                                                                                                                                                                                                                                                                      FUNCTION: NUCLEASE THAT RESOLVES HOLLIDAY JUNCTION INTERMEDIATES
                                                                     SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                             (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FVNSTATTKGGRHVDYVVDQVVSKLIEVVKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity 21.9
7; Conservative
                                                                                                                                                                                                                                                                                     8:205-213(2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1612 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     814
                                                                                                                                                                                                                                                                                                                                        akamura Y., Wolk C.P., Kuritz T., Sasamoto S.,
Iriguchi M., Ishikawa A., Kawashima K., Kimura
Kohara M., Matsumoto M., Matsuno A., Muraki A.,
Shimpo S., Sugimoto M., Takazawa M., Yamada M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                       PubMed-11759840;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   175
814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29.0%;
21.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181863 MW;
                                                                                                                                   magnesium ion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7120)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nostocales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 40; DB
Pred. No. 41;
11; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATP (POTENTIAL).
DNA CLEAVAGE (BY SIMILARITY).
M; 331B9300651308C4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  controlled
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                filamentous nitrogen-fixing PCC 7120.";
                                                                                                                   per subunit FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nostocaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      163 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \omega
             noved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
                                           There are no restrictions ing as its content is in
                                                                                                                                                                              cleavage at a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                уd
                                                                                                                                                                between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>م</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              diffusible peptide.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1612;
                                                                                                                                   (Ву
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                two
                                                                                                                                 similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nuclear
                                                                                                                                                                                                                                                                                                                                                                          Kimura
                                                                                                                                                                            junction such
                                                                                                                                                              homologous
                              and
                     is
is
                                                                                                                                                                                                                                                                                                                                                                          ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                             in no way
                                                            on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                 δÃ
                                                                                  VHR2_SPVKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                         Matches
                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                            P23333;
01-NOV-1991
01-NOV-1991
15-JUN-2002
                                                                                                                                                                                                                                                                          "Identification and nucleotide sequence of swinepox virus.";
Virolonv lo Tripathy D.N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 METAL
METAL
                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entropean Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AF046871; AAC03106.1;
EMBL; AP003589; BAB73996.1;
HSSP; P24239; 1HJR.
                                                                               Early protein.
SEQUENCE 185 AA;
                                                                                                                                                      entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                       -i- FUNCTION: Plays a role for multiplication of the different cell types (By similarity).
-i- SIMILARITY: BELONGS TO THE POXVIRUSES C7 FAMILY.
                                                                                                                                                                                                                                                                         Virology 181:727-732(1991).
                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A. MEDLINE=91196265;
                                                                                                                                                                                                                                                                                                                                                          Suipoxvirus
                                                                                                                                                                                                                                                                                                                                                                     Viruses;
                                                                                                                                                                                                                                                                                                                                                                                Swinepox virus
                                                                                                                                                                                                                                                                                                                                                                                          SWF8A
                                                                                                                                                                                                                                                                                                                                                                                                    Probable host
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TIGRFAMS; TIGR00228; ruvC; 1. PROSITE; PS01321; RUVC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRINTS; PR00696; RSOLVASERUVC ProDom; PD008333; RuvC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR002176; RuvC. Pfam; PF02075; RuvC; 1.
                                                                                                     Pfam; PF03287; Pox_C7_F8A; 1.
                                                                                                                          PIR;
                                                                                                                                  EMBL; M59931;
                                                                                                                                                                            modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=10277;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       VHR2_SPVKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hydrolase;
                                                                                                                InterPro;
106 CTKEKYPIININIDKKKYEIIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16 GFGAITCTPGLTQLQSTKVNVLDFGVIKTSADI
                    7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GFIATLCT------KXXXXVLDFGIDKXXXXL
                                                                                                                       C37949; WZVZSW.
                   CTKXXXXVLDFGIDKXXXXLIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11;
                                       7; Conserv
                                                                                                                                                                                                                                                                                                                                                                     dsDNA viruses,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              proteome.
                                                                                                              IPR004967; Pox_C7_F8A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
76
148
151
163 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nuclease; DNA repair;
                                                                                                                                                                                                                                                                                                                                                                                                             (Rel.
(Rel.
(Rel.
                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                    AAA47892.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                 range protein
                                                                                                                                                                                                                                                                                                                                                                                (strain Kasza)
                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                             20,
20,
41,
                                                                                                                                                                                                                                                                                                                  PubMed = 1840707;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      148
151
                                                                                21751 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28.6%;
                                                  28.3%;
31.8%;
                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                    no RNA stage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MAGNESIUM (BY SIMIL MAGNESIUM)
 127
                   28
                                       ភ
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2;
                                                 Score 39; I
Pred. No. 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 39.5;
Pred. No. 5
                                                                                                                                                                                                                                                                                                                                                                              (SPV).
                                                                                46DD65F31DB63C56 CRC64;
                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA recombination;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      185
                                                                                                                                                                (See http://www.isb-sib.ch/announce,
                                                                                                                                                                                                                                                                                                                                                                     Poxviridae; Chordopoxvirinae;
                                                                                                                                                                                                                                                                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26
                                                            DB
                                                                                                                                                                                                                                                                                             of the thymidine kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                            ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY)
                                                                                                                                                                           Usage
                                        10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13;
                                                                                                                                                                                                                                                              of the
                                                            Length 185;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 163;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                         Indels
                                                                                                                                                                            γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Magnesium;
                                                                                                                                                                                       restrictions
ent is in
                                                                                                                                                                             and
                                                                                                                                                                                                          EMBL
                                                                                                                                                                                                           a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7;
                                       0
                                                                                                                                                                             for
                                       Gaps
                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                            n no way
                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
                                       0
```

```
밁
                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VG33_HSVI1 STANDARD; PRT; 290 AA.

DVG33_HSVI1 STANDARD; PRT; 290 AA.

AC 000118;
DT 01-DEC-1992 (Rel. 24, Created)
DT 01-DEC-1992 (Rel. 24, Last sequence update)
DT 01-DEC-1992 (Rel. 24, Last annotation update)
DE Hypothetical gene 33 protein.

GN 33.
Search completed: May 9, 2003, 16:16:16
Job time : 14.9706 secs
                                                                                                                                                                                                      Query Match
Best Local Similarity 77.8
Matches 7; Conservative
                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                 EMBL; M75136; AAA88136.1; -. PIR; G36789; G36789. Hypothetical protein. SEQUENCE 290 AA; 34173 MW;
                                                                                                                                                                                                                                                                                                                                                                                                      "Channel catfish virus: a new type of herpesvirus.";
Virology 186:9-14(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
STRAIN-Auburn 1;
MEDLINE-92087490; PubMed-1727613;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ictalurid herpesvirus 1 (Channel catfish virus) (CCV).
Viruses; dsDNA viruses, no RNA stage; Herpesviridae;
Ictalurid Herpes-like viruses.
NCBI_TaxID=10401;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Davison A.J.;
                                                                  217 GFITTTCTK 225
                                                                                      1 GFIATLCTK 9
                                                                                                                                                   28.3%;
                                                                                                                                Score 39; DB 1; Length 290; Pred. No. 11; 0; Mismatches 2; Indels
                                                                                                                                                                                                     21C26260985A7E5E CRC64;
                                                                                                                                  0
                                                                                                                                  Gaps
                                                                                                                                  0;
```

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OM protein - protein search, using sw model
SPTREMBL_21:*

Sp_archea:*

sp_bacteria

sp_bacteria

sp_bacteria

sp_human:*

sp_invert

p_invert

sp_invert

sp_invert
sp_invert
s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-851-422A-1
138
1 GFIATLCTKXXXXVLDFGIDKXXXXLTQLIEDKXXXX 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                May 9, 2003, 16:10:40; Search time 25.3922 Seconds (without alignments) 300.240 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 671580 seqs, 206047115 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sp_archea:*
sp_bacteria:*
sp_fungi:*
             sp_vertebrate:*
sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                        sp_rodent:*
sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                sp_invertebrate:*
sp_mammal:*
sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                            sp_organelle:*
sp_phage:*
                                                                                                                                                                                                                                                                                                                sp_plant:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  671580
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

16	. 15	14	13	12	11	10	9	œ	7	o	رت ر	.4	ω	2	1	Result
42	43	43	43	43	43	43	43.5	43.5	44	44	44	44	46	49	64	Score
30.4	31.2	31.2	31.2	31.2	31.2	31.2	31.5	31.5	31.9	31.9	31.9	31.9	33.3	35.5	46.4	Query Match I
241	603	594	594	431	389	162	807	388	607	607	600	215	87	101	96	Length DB
13	4	11	11	11	12	v	16	16	12	12	10	16	Ç	v	Ų	DB B
057532	Q96TG8	Q8VD51	088290	Q9DBR9	041091	044142	Q985D7	Q8XN50	056986	Q84690	Q9LS72	Q9PHP9	015591	Q9U8G4	Q908G5	ID .
057532 xenopus lae	. Q96tg8 homo sapien	. Q8vd51 mus musculu	088290 mus musculu	Q9dbr9 mus musculu	O41091 paramecium	O44142 caenorhabdi	Q985d7 rhizobium l	Q8xn50 clostridium	Ç.	Q84690 phocine dis	Q91s72 arabidopsis	Q9php9 campylobact	015591 entamoeba h	. Q9u8g4 entamoeba d	Q9u8g5 entamoeba d	Description

RESULT 2

45	44	43	42	41	40	39	38	37	36	υ 5	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	. 18	17
39	39	39	39	39	40	40	40	40	40	40	40	40.5	41	41	41	41	41	.41	41	41	41	41	41	41.5	41.5	41.5	42	42
28.3	•		•		•	29.0	•	29.0	29.0	29.0	29.0	29.3	29.7	29.7	29.7	29.7	29.7	29.7	29.7	29.7	29.7	29.7	29.7	30.1	30.1	30.1	30.4	30.4
253	249	223	213	149	1007	985	754	487	309	217	149	674	1094	666	666	666	666	666	665	388	330	254	254	918	474	474	498	444
16	σ	16	17	10	4	17	10	16	10	16	10	ហ	10	12	12	12	12	12	12	10	v	12	12	17	16	2	17	16
Q9K3Y7	Q9U491	Q9JRF1	Q978A2	Q8S4R5	043379	Q97AX8	Q9SR95	Q97S79	Q9AX19	067058	Q8S4R6	Q09403	022220	Q8QMZ0	Q9PXS8	Q9QNJ6	Q9JFC9	Q85376	Q8V520	Q8W330	Q9VP58	282258	Q8V2V2	OSTWY1	Q57155	Q9ALS1	Q58807	Q916X0
Q9k3y7 streptomyce	Q9u491 schistosoma	Q9jrfl neisseria m	Q978a2 thermoplasm	Q8s4r5 exochorda r	043379 homo sapien		Q9sr95 arabidopsis	Q97s79 streptococc	Q9ax19 oryza sativ	067058 aquifex aeo	O1	Q09403 caenorhabdi	O22220 arabidopsis	Q8qmz0 cowpox viru	Q9pxs8 variola vir	Q9qnj6 variola min	Q9jfc9 vaccinia vi	Q85376 variola maj			Q9vp58 drosophila	Q8qq58 camelpox vi	Q8v2v2 camelpox vi		Q57155 pseudomonas	Q9als1 pseudomonas	Q58807 methanococc	Q916x0 pseudomonas

ALIGNMENTS

Qу	Que Bes Mat	SQ		FT		뮻	ב ב	2 5	RL	RT	RT	RA	RC	RР	RN	0X	8	SO	GN	DE	DT			AC	ID Q	RESULT
1 GFIATLCTKXXXXVLDFGIDKXXXXL1QLIED 32 : : : : 59 GFLGTLCNKILSFGVDELVKLIEN 82	Query Match 46.4%; Score 64; DB 5; Length 96; Best Local Similarity 43:8%; Pred. No. 0.0003; Matches 14; Conservative 7; Mismatches 3; Indels 8; Gaps	SEQUENCE 96 AA; 10480 MW; 9FA42AAC9A9FAFB2 CRC64;	CHAIN 20 96 PORE-FORMING PROTEIN ISOFORM B.	SIGNAL 1	Signal	SMART; SM00118; SAPB; 1.				to amoebapores in structure, expression and activity.";		Nickel R., Ott C., Dandekar T., Leippe M.;			[1]	NCBI_TaxID=46681;		Entamoeba dispar.	DP-B.	Pore-forming protein isoform		(TrEMBLrel. 13,	01-MAY-2000 (TrEMBLrel. 13, Created)	Q9U8G5;	Q9U8G5 PRELIMINARY; PRT; 96 AA.	SULT 1
	2;																									

```
á
                                                                                        RESULT
015591
                                                                                                                                                                                                                                                                                                                                                                                                                 Š
В
                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 10
                                                   Query Match
Best Local S
                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  O9U8G4

O9U8G4;

O9U8G4;

O1-MAY-2000 (TrEMBLrel. 13, Created)

O1-MAY-2000 (TrEMBLrel. 13, Last sequence update)

O1-JUN-2002 (TrEMBLrel. 21, Last annotation update)

Prore-forming protein isoform C precursor.
                                                                                                                                                                                                                                                                                                                             015591;
                                                                                        NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDILINE-99449604; PubMed-10518795;
Nickel R., Ott C., Dandekar T., Leippe M.;
"Pore-forming peptides of entamoeba dispar similarity and divergence "Pore-forming peptides of entamoeba dispar similarity and divergence to amoebasores in structure, expression and activity.";
                                                                                                                                                                                                                                             Entamoeba histolytica.
Eukaryota; Entamoebidae; Entamoeba
NCBI_TaxID-5759;
                                                                                                                                                                                                                                                                            01-JAN-1998 (TrEMBLrel. 05, Created 01-JAN-1998 (TrEMBLrel. 05, Last so 01-MAR-2002 (TrEMBLrel. 20, Last an Amoebapore C homologue (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           to amoebapores in structure, expression 2, Biochem. 265:1002-1007(1999).
EMBL; AF082529; AAF04196.1; -.
Interpro; IPR000004; Sapb.
ProDom; PD001732; Sapb; 1.
                                                                                                                       InterPro; IPR000004; SapB. SMART; SM00118; SAPB; 1.
                                                                                                                                            Biochem. Biophys. Res. Commu
EMBL; AB002741; BAA21986.1;
                                                                                                                                                                  Tanaka T., Tanaka M., Mitsui Y.;
"Analysis of expressed sequence tags (ESTs) of the parasitic protozoa Entamoeba histolytica.";
                                                                                                                                                                                                     MEDLINE-97396144; PubMed-9245698;
                                                                                                                                                                                                                  STRAIN-HM-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SMART; SM00118; SAPB; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID-46681;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Entamoeba dispar.
Eukaryota; Entamoebidae;
                                                                                                             NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                           EQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                             w
59
                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                              64
                                                                                                                                                                                                                                                                                                                                                                                             1 GFIATLCTKXXXXVLDFGIDKXXXXLIQ 28
| | | |:|:| :: :||| :: :|:
64 GVIETVCSK---IVSYGIDKLIEKIIE 87
                     _
                   GFIATLCTKXXXXVLDFGIDKXXXXLI 27
GLVATLCTP----IASEGIAKLLASIL
                                           Similarity
10; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                          10; Conserv
                                                                                  87
87 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     101
                                           Conservative
                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25
25
                                                                                        <u></u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             101
                                                                                        9131 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10877
                                                                                                                                                                                                                                                                                                                                                                                                                                                   35.5%;
                                                   33.3%;
                                                                                                                                                        Commun. 236:611-615(1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Entamoeba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        W.
                                          Score 46; DB
Pred. No. 0.71
4; Mismatches
                                                                                                                                                                                                                                                                                          Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 49; DB
Pred. No. 0.22
7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     POTENTIAL.

PORE-FORMING PROTEIN ISOFORM; 7699A7EA9E0876EB CRC64;
                                                                                        FDD1C1B0FAB8B06E CRC64;
                                                                                                                                                                                                                                                                                                                                        PRT;
18
                                                                                                                                                                                                                                                                                                                                        87
                                                    DB 5;
0.71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 5
                                                                                                                                                                                                                                                                                                                                        ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>ن</u>
                                           9
                                                               Length 87;
                                                                                                                                                                                                                                                                                                                                                                                                                                           7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                          4;
                                                                                                                                                                                                                                                                                                                                                                                                                                           4.
                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
```

RESULT

ے

0

Gaps

0

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                               Q9LS72
                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 5
Query Match
Best Local S
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                   01-OCT-2000
01-OCT-2000
01-JUN-2002
                                                                                                                     features of clones.";
                                                                                                                                                                                                                                                                           Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheopenatophyta; Magnoliophyta; eudicotyledons; core eudicots; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                       09LS72;
09LS72;
                                                         DNA Res. 7:131:135(2000).
EMBL; AB026657; BAB01819.1;
InterPro: IPR002885; PPR.
Pfam; PF01535; PPR; 11.
TIGRFAMS: TIGR00756; PPR; 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Parkhill J., Wren B.W., Mungall K., Ketley J.M., Churcher C., Basham D., Chillingworth T., Davies R.M., Feltwell T., Holroyd S., Jagels K., Karlyshev A.V., Moule S., Pallen M.J., Penn C.W., Quail M.A., Rajandream M.A., Rutherford K.M., van Vliet A.H.M., Whitehead S., Barrell B.G.;
"The genome sequence of the food-borne pathogen Campylobacter jejuni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN-NCTC 11168;
MEDLINE-20150912; PubMed-10688204;
Parkhill J. Wren B.W., Mungall K.,
Basham D., Chillingworth T., Davies
Jagels K., Karlyshev A.V., Moule S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-2000 (TrEMBLrel. 15, 01-OCT-2000 (TrEMBLrel. 15, 01-DEC-2001 (TrEMBLrel. 19, 14, pothetical protein C)0618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 reveals hypervariable sequences.";
Nature 403:665-668(2000).
EMBL; AL139075; CAB75254.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Campylobacter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Campylobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   оэрнрэ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09РНР9
                                                                                                                                                                     STRAIN-COLUMBIA; MEDLINE-20277480;
                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                    Submitted
                                                                                                                                                                                                                               Sato
                                                                                                                                                                                                                                             STRAIN-COLUMBIA;
                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                         Gb|AAC35225.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hypothetical protein; SEQUENCE 215 AA; 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID-197;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CJ0618
                                                                                                                                                         Nakamura
                                                                                                                                             Structural
                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                               s.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GFIATLCTKXXXXVLDFGID
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GYLANLCAKIAPWSIDFILD
 Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
8; Conser
                                                                                                                                                                                                                   Nakamura Y.,
d (APR-1999)
                                             ; TIGR00756;
600 AA; 6
                                                                                                                                   of.
                                                                                                                               analysis of Arabidopsis thaliana chromosome the regions of 4,504,864 bp covered by sixty
                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel. 15, 0) (TrEMBLrel. 15, 1) (TrEMBLrel. 21, 1
                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              jejuni
                                                                                                                                                                      PubMed=10819329;
                                              5; PPR; 11.
67338 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25544 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31.9%;
           31.98;
                                                                                                                                                                                                                    င်
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 15, Creater,
15, Last sequence upd
. 19, Last annotation (
                                                                                                                                                                                                                               Kaneko T.,
                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                              27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  epsilon
Score 44; DB
Pred. No. 12;
3; Mismatches
                                                                                                .
                                                                                                                                                                                                                    D T., Kato T., Asamizu E., T
EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. 4.2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                A78D9C89BE2560D2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           proteome.
86E24BD71729D1EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  subdivision; Campylobacter group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 215
                                                                                                                                                                                                                                                                                                                                                                                                   600
          рв
12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
                                                                                                                                                                                                                                                                                                                                                                                                   ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          update)
                         10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                       Length 600;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 215;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CRC64;
                                                                                                                                                                                                                                                                                                               Tracheophyta;
                                                                                                                                                                                                                                 Tabata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                               S
                                                                                                                                  Sequence
nd TAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

맑 δÃ

419

FIAVLCSCNHAGLIDEGID 437 FIATLCTKXXXXVLDFGID

N

20

```
OSCORDANCE OF THE PROPERTY OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
         Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                           056986;
056986;
01-JUN-1998
01-JUN-1998
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q84690;
Q84690;
Q1-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=PDY/DK88;
STRAIN=PDY/DK88;
MEDLINE-92113538; PubMed=1765768;
Kovamees J., Blixenkrone-Moller M., Sharma |
The nucleotide sequence and deduced amino
The nucleotide sequence and deduced the m
                                                                                         Submitted (FEB-1998) to the EMBL/GenBank/DDBJ EMBL; AJ224707; CAA12080.1; -
InterPro; IPR000665; Hem-neuramndse.
pfam; pF00423; HN; 1.
NON_TER 607 607
                                                                                                                                                                                                        "Expression of phocid virus.";
                                                                                                                                                                                                                                                                                                                               Phocine distemper virus (PDV):
Viruses; SSRNA negative-strand viruses; Mononegavirales;
Paramyxoviridae; Paramyxovirinae; Morbillivirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        haemagglutinin and fusion proteins distemper virus.";
J. Gen. Virol. 72:2959-2966(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Phocine distemper virus (PDV).
Viruses; ssRNA negative-strand viruses; Mononegavirales;
Paramyxoviridae; Paramyxovirinae; Morbillivirus.
                                                                                                                                                                                                                                                 SEQUENCE FROM N.A. Vos H.W., Harder T.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-NOV-1996
01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00423;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Structural viral protein.
                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=11240;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR000665; Hem-neuramndse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (SEP-1994) to the EMBL/GenBank/DDBJ EMBL; Z36979; CAA85428.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Blixenkrone-Moller M.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-PDV/DK88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID-11240;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 292 LASLCTKESTILLNLGDEESQNSVLVVI 319
                                                                                                                                                                                                                                                                                                                                                                                                           protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3 IATLCTKXXXXVLDFGIDKXXXXLIQLI 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                         (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              423; HN;
607 AA;
                                                                         607
                                                                                                                                                                                                                                                                                                                                                                                                                         (TremBLrel. 06, Created)
(TremBLrel. 06, Last seq
(TremBLrel. 19, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (TremBLrel. 01, Last sequence update) (TremBLrel. 17, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                         AA
ج
                                                                       607
68842 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68962 MW; BD9FB8D3AE291C5B CRC64;
      31.9%;
                                                                                                                                                                                                                            distemper
                                                                                                                                                                                                                                               Kenter M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01,
                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 44;
Pred. No.
      Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                         622D6D5A88E179E5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                            virus
                                                                                                                                                                                                                            Osterhaus
irus F and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sharma B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         607
DВ
12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ζ
                                                                                                                                                                                                                                                                                                                                                                                                                           on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         morbillivirus phod
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acid
                           12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12;
                                                                                                                                                                                                                          A.D.M.E.;
H genes in vaccinia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11;
                                                                                                                                                                                   databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Orvell C.,
                             Length 607;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 607;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      phocid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Norrby
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

```
RESULT RESULT OF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
Q985D7
    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ol-MAR-2002 (TrEMBLrel. 20, Created, Ol-MAR-2002 (TrEMBLrel. 20, Last sec. Ol-JUN-2002 (TrEMBLrel. 21, Last ann Capsular polysaccharide biosynthsis CPE0488.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Complete SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      flesh-eater.";

Proc. Natl. Acad. Sci. U.S.A. 99:996-
EMBL, AP003187; BAB80194.1; -.

InterPro; IPR001296; Glycos_transf_1.

Pfam; PF00534; Glycos_transf_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Shimizu T., Ohtani K., Hirakawa H., Ohshima K., Yamash
Shiba T., Ogasawara N., Hattori M., Kuhara S., Hayashi
"Complete genome sequence of Clostridium perfringens,
                    DNA Res. 7:331-338(2000).
EMBL, APPO33012; BAB54125.1; -.
InterPro; IPR000015; Fimb_usher
Pfam; PF00577; Usher; 1.
                                                                                                                                                     Kaneko T., Nakamura Y., Sato S., Asamizu E., Kato T., Sasawatanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno Mochizuki Y., Nakayama S., Nakazaki N., Shimpo S., Sugimot Takeuchi C., Yamada M., Tabata S.;
                                                                                                                                                                                                                                           STRAIN≃MAFF303099;
MEDLINE=21082930; PubMed=11214958;
Kaneko T., Nakamura Y., Sato S., A
                                                                                                                                                                                                                                                                                                                                                                             Rhizobium loti (Mesorhizobium loti).
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae
Phyllobacteriaceae; Mesorhizobium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hypothetical MLL7724.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. STRAIN=13 / TYPE A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteria; Firmicutes; Bacillus/Clostridium Clostridiales; Clostridiaceae; Clostridium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Clostridium perfringens.
                                                                                                           "Complete genome structure of the nitrogen-fixing Mesorhizobium loti.";
                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q985D7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q985D7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PubMed=11792842;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=1502;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q8XN50;
01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q8XN50
                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=381;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GFIATLCTKXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LASICTKESTILLNLGDEESQNSVLVVI 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IATLCTKXXXXVLDFGIDKXXXXLIQLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                œ
``
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                45089 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31.5%;
Complete proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last
Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Last sequence update)
Last annotation updat
synthsis protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 43.5; D
Pred. No. 9.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99:996-1001(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                371FC2A13775F55A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         group; Clostridia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          , Yamashita
Hayashi H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                symbiotic bacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                            Sugimoto
                                                                                                                                                                                                                        Kimura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ān
                                                                                                                                                                                                                                           Sasamoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          anaerobic
                                                                                                                                                                                                 ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Α.
                                                                                                                                                                                                                                                                                                                                                                                                  group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ۲,
```

end of the 330-kb

Gurnon

J.R.,

Xing

```
RESULT 11
O41091
ID O4109
AC O4109
AC 01-JA
DT 01-JA
DT 01-JA
DT 01-JC
CA A609L
CA A609L
OS PATAM
OC V1rus
OX NCBI
RN [1]
RN [1]
RN SEQUE
RX MEDIL
RA L1 Y.
                                                                                                                                                                                                                                                                                                                           RESULT 10
004414
AC 04414
AC 04414
AC 01-DE
DT 01-DE
DE (449bt
GN Caeno
OC Eukar
OC Rhabd
OX NCB1_
RN SEQUE
RC STRAII
RX NODE;
RY SCOUE
RT SCOUE
RT SCOUE
RT SCOUE
RT SCOUE
RT SCOUE
RT SCOUE
RC STRAII
RX NODE;
RT SCOUE
RT SCOUE
RT SCOUE
RT SCOUE
RT SCOUE
RC STRAII
RX NODE;
RT SCOUE
                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SQ
                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                             Matches
                                                                                                             041091
041091;
01-JAN-1998
01-JAN-1998
01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            044142 PRELIMINARY; PKT; 102 km. 044142; 01-JUN-1998 (TrEMBLrel. 06, Created) 01-DCT-2001 (TrEMBLrel. 18, Last sequence update) 01-DEC-2001 (TrEMBLrel. 19, Last annotation update) 01-DEC-2001 (TremBLrel. 19, Last annotation update)
SEQUENCE FROM N.A. MEDLINE=98022962; Li Y., Lu Z., Sun
                                               Paramecium bursaria chl.
Viruses; dsDNA viruses,
NCBI_TaxID=10506;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. STRAIN-BRISTOL N2; MEDLINE-99069613;
                                                                                                PBCV-1 UDP-glucose dehydrogenase.
                                                                                                                                                                                                                                                                                                                                      "Direct Submission.";
Submitted (JUN-2001) to the
EMBL; AF036692; AAB88326.2;
Hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                       "The sequence of C. Submitted (DEC-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rhabditidae; Pel
NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C44B12.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hypothetical 18.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                         Waterston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tin-Wollam A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Genome sequence of the nematode investigating biology. The C. elescience 282:2012-2018(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14 VLDFGIDKXX-XXLIQLIEDK 33
                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                    14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                           MIKFGIDKKWAQMISGIEEK
                                                                                                                                                                                                                                                  VLDFGIDKXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VLDFGVSKAADAALVSLVDGK 737
                                                                                                                                                                                                                                                                             Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                            162 AA; .1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      807
                                                                                                             (TrEMBLrel. 05, Created)
(TrEMBLrel. 05, Last sequence up)
(TrEMBLrel. 21, Last annotation)
                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                            AA; .18933 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۶
۲
PubMed=9356347;
L., Ropp S., Ku
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed-9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          kDa protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                       elegans
) to the
                                                            chlorella virus 1
ses, no RNA stage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    85409 MW;
                                                                                                                                                                                                                                                                                     31.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31.5%;
42.9%;
                                                                                                                                                                                                                           80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                                                                                                                                                                                                               EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                       cosmid C44B12.";
EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                   Score 43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 43.5;
                                                                                                                                                                                                                                                                                        Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ode C. elegans: a pl
elegans Sequencing
                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   912CDA09F0CD8B56 CRC64;
  Kutish
                                                                                                                                                                                                                                                                                                                            5D6EEB5A7E970B08 CRC64;
                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                      e 43; DB 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Z
O
                                                                                                                                                                389
  G
                                                            (PBCV-1).
Phycodnaviridae;
 .
Т
                                                                                                             on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                   ა
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
  Rock
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16;
                                                                                                                                                                                                                                                                                                                                                                                                                                        databases
                                                                                                                                                                                                                                                                           7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           platform for
ng Consortium
                                                                                                                                                                                                                                                                                                  Length 162
D.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                            Indels
                                                               Chlorovirus
  ۷an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            807;
 Etten
                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                           Gaps
 J.L.;
                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1:
  RR OCC OC DITTE
                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                               Q9DBR9
                                                                                                                                                                          RESULT 12
                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 12
                                                                            OSDBR9;
01-JUN-2001 (TrEMBLrel. 17, C)
01-JUN-2001 (TrEMBLrel. 17, L)
01-MAR-2002 (TrEMBLrel. 20, L)
Syntaxin binding protein 1.
                                                                                                                                                                                                                                                                                                           InterPro: IPR001732; UDPG_MGDP_dh. Pfam; PF00984; UDPG_MGDP_dh: 1. Pfam; PF03720; UDPG_MGDP_dh_N; 1. Pfam; PF03771; UDPG_MGDP_dh_N; 1. SEQUENCE 389 AA; 43458 MW; ED5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
Graves M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE-20478054; PubMed-11021991;
MEDLINE-20478054; PubMed-11021991;
MEDLINE-20478054; PubMed-11021991;
                     Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=20013326; PubMed=10544099;
Kaiser A., Vollmert M., Tholl D., Grav
Lisec A.D., Nickerson K.W., Van Etten
                                                                                                                                                 Q9DBR9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Analysis of 74 kb of DNA located chlorella virus PBCV-1 genome.";
                                                             Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                          EMBL; U42580;
                                                                                                                                                                                                                                                                                                                                                                                       Submitted
                                                                                                                                                                                                                                                                                                                                                                                                    Gurnon J
                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Graves M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. Van Etten J.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. Van Etten J.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sun L., Gurnon J.R., Adams B.J., Graves M.V., "Characterization of a beta-1,3-glucanase ency
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Virology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Virology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Chlorella virus PBCV-1 encodes a functional homospermidine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Virology 237:360-377(1997).
                                                                                                                                                                                                               10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Etten
                                                                                                                                                                                                              GYVGTACAVLLAQKNEVIVLDISEDR-----VQLIKNK
                                                                                                                                                                                                                                     GFIATLCT----KXXXXVLDFGIDKXXXXLIQLIEDK
                                                                                                                                                                                                                                                              l Similarity
12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            J FROM N.A.
Van Etten
                                                                                                                                                                                                                                                                                                                                                                                               , æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       276:27-36(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          263:254-262(1999).
                                                                                                                                                                                                                                                                                                                                                                                      (DEC-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                      V., Van Etten
(MAY-1999) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (DEC-1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (SEP-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MAY-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (DEC-1995)
                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                   Graves M.V.,
                                                                                                                                                                                                                                                                                                                                                                          AAC96945.
                                    Chordata;
Rodentia;
                                                                                                                                                                                                                                                                        31.2%;
                                                                                                                                                                                                                                                                                                                                                                                      to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      င်
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ç
                                                                                                                                                                                                                                                                                                                                                                                                                                       ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  J.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the
                                                                                                                                                                                                                                                                                                                                                                                                    Van
                                                                                                                                                                                                                                                                                                                                                                                     an Etten J.L.;
EMBL/GenBank/DDBJ
                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL/GenBank/DDBJ
                                                                                                Last sequence up
                                                                                                                                                                                                                                                             Score 43; DB pred. No. 12; 6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL/GenBank/DDBJ
                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Graves M.V., ten J.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the
                                                                                                                                                   431
                                                                                                                                                                                                                                                                       DB
12;
                                                                                                                                                   ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   right
```

```
Craniata; Vertebrata; ! Sciurognathi; Muridae;
                                                                                                                                                                                                                                                 ED5B5A98975426E0 CRC64;
                                                                   sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           f.V., Van
encoded
                                                                                                                                                                                                                           12;
                                                       update)
                                                                                                                                                             42
                                                                                                                                                                                 33
                                                                                                                                                                                                       10;
                                                                                                                                                                                                                                                                                                                                                                                                          databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                     databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            databases
                                                                                                                                                                                                                                                                                                                   databases
                                                                                                                                                                                                                                                                                                                                                              databases
                                                                                                                                                                                                                           Length 389;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Etten J.L.;
by chlorella virus
                                                                                                                                                                                                       Indels
            Euteleostomi;
   Murinae;
                                                                                                                                                                                                       10;
                                                                                                                                                                                                       Gaps
```

Ņ

```
RESULT 13
O8829
O829
AC O8829
AC O8829
AC O8829
DT 01-NO
DT 01-NO
DT 01-MA
DE MUNCIL
GN MS106
OS MUS m
OC EUKAR
OC MAMMA
OX NCBIL
RN SEQUE
RC STRAI
RA GOTCH
RT "GENC
RT "GENC
RT "GENG
RT AN GENBL;
DR EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kuchi P., Lewis S., Matsuc Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuchi P., Lewis S., Matsuc Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuchi P., Lewis S., Matsuc Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuchi P., Lewis S., Matsuc Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuchi R., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Sakai K., Okido T., Furuno M., Aono H., Adaraninci P., de Bonaldo M.F.,
RA Blake J., Boffelli D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
RA Mordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
Ra Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
Ra Brownstein M., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
Hayashiyaki Y., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                "Genomic and fusion
                                                                                                                                            EMBL;
                                                                                                                                                                                                                                         EMBL;
                                                                                                                                                                                                                                                                                         EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O88290;
01-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  088290
                                                                                                                                                                     EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                      MGD; MGI:107363; Stxbp1.
MGD; MGI:2137748; MS10g.
                                                                                                                      EMBL; AB012587; BAA32486.1; EMBL; AB012588; BAA32486.1;
                                                                                                                                                                                                                                                                                                                                                                                                               Gotoh K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=98370997; PubMed=9705297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MS10G OR STXBP1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nature 409:685-690(2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hayashizaki Y.;
"Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-21085660;
                                                  InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13
                                                                                                                                                                                                                                                                                                                                           Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 IATLCT--KXXXXVLDFGIDKXXXXLIQLIEDK 33
                                                                                                              L; AB01015; BAA32486.1; JOINED.
L; AB012582; BAA32486.1; JOINED.
L; AB012583; BAA32486.1; JOINED.
L; AB012584; BAA32486.1; JOINED.
L; AB012585; BAA32486.1; JOINED.
L; AB012586; BAA32486.1; JOINED.
L; AB012586; BAA32486.1; JOINED.
L; AB012587; BAA32486.1; JOINED.
L; AB012588; BAA32486.1; JOINED.
                                                                                                                                                                                                                                                                                                                                 oh K., Yokota H., Kikuya E., Watanabe T., Oishi M.; nomic structure of MUNC18-1 protein, which is involved fusion of synaptic vesicles in brain."; biol. Chem. 273:21642-21647(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MGI:107363; Stxbp1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IATLCATLKEYPAVRYRGEYKDNALLAQLIQDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PF00995;
                                                                                                                                                                                                                                                                                                                AB012697; BAA32486.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AK004780; BAB23558.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l Similarity
15; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IPR001619; Sec1-like.
0995; Sec1; 1.
                                               IPR001619; Sec1-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 (TrEMBLrel. 08,
3 (TrEMBLrel. 08,
2 (TrEMBLrel. 20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  431 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Mouse)
Secl;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE-LUNG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PubMed=11217851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             49141 MW;
67549 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
5FD851D8E380079E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5335EF4F2FCB7F35 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , Itoh M., La...
T., Fukuda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 431;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                      in docking
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.
```

```
RESULT 14
Q8VD51
                                                                                                                                                                                                                                                                                                                                                                                                                   ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
            δ
                                                                                                                    RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                                                                                                                                                                                                                            Q96TG8;
01-DEC-2001 (TrEMBLrel. 1:
01-DEC-2001 (TrEMBLrel. 1:
01-MAR-2002 (TrEMBLrel. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ul-MAR-2002 (TrEMBLrel. 20, 01-MAR-2002 (TrEMBLrel. 20, 01-JUN-2002 (TrEMBLrel. 21, Syntaxin binding protein 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (DEC-2000) to the EMBL/GenBank/DDBJ EMBL; AF326545; AAL37391.1; ... InterPro; IPR001619; Sec1-11ke.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                   Genomics 48:373-376(1998).

EMBL; AF004563; AAC39689.1; -.

InterPro; IPR001619; Sec1-1ike.
                                                                                                                                                   MEDILINE-98207254; PubMed-9545644;
Swanson D.A., Steel J.M., Valle D.;
"Identification and characterization of the human ortholog of rat
STXBP1, a protein implicated in vesicle trafficking and
                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                          HUNC18b
                                                                                                                                                                                                                                                                                                                                  Q96TG8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              traits on mouse chromosome 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=DBA/2J; TISSUE-BRAIN;
Fehr C., Buck K.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q8VD51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q8VD51
                                                                                   SEQUENCE
                                                                                            InterPro; IPRO
Pfam; PF00995;
                                                                                               Pfam;
                                                                                                                                           neurotransmitter release.";
                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                        NCBI_TaxID=9606;
                                                                                                                                                                                                                                                            Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Characterization of candidate genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                            176 IATLCATLKEYPAVRYRGEYKDNALLAQLIQDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     176 IATLCATLKEYPAVRYRGEYKDNALLAQLIQDK
                                   Local Similarity
nes 15; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 IATLCT--KXXXXVLDFGIDKXXXXLIQLIEDK 33
3 IATLCT--KXXXVLDFGIDKXXXXLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                   3 IATLCT -- KXXXXVLDFGIDKXXXXXLIQLIEDK 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PF00995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15;
                                                                                                                                                                                                                                                                                                                                                                                                                                           l Similarity
15; Conser
                                                                                  995; Sec1;
603 AA; 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       594 AA;
                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sec1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       67567 MW;
                                                                                  68735 MW;
                                              31.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    31.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31.2%;
                                                                                                                                                                                                                                                                                  19,
19,
20,
                                   ; Score 43; DB;
; Pred. No. 18;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 43; DB 1
Pred. No. 18;
1; Mismatches.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                  Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Craniata; Vertebrata; E
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                  73D8337768259493 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       281F1070E3BCE251 CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for
                                                                                                                                                                                                                                                                                                                                  603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
18;
                                                                                                                                                                                                                                                                                                                                                                                            208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      208
                                                          DB '4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ξ
                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            multiple ethanol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11;
                                                                                                                                                                                                                                                                                  update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15;
                                   15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    databases
                                                          Length 603;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 594;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 594;
                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             influenced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2
                                    2;
                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus
                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                   ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                           ۳.
```

Db 176 IATLCATLKEYPAVRYRGEYKDNALLAQLIQDK 208

Search completed: May 9, 2003, 16:17:34 Job time : 29.3922 secs

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        on:
                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have score greater than or equal to the score of the result being part and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                     Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq
seq
        9999994999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A_Geneseq_101002:*
1: /SIDS2/gcgdata/ge
2: /SIDS2/gcgdata/ge
3: /SIDS2/gcgdata/ge
4: /SIDS2/gcgdata/ge
6: /SIDS2/gcgdata/ge
6: /SIDS2/gcgdata/ge
6: /SIDS2/gcgdata/ge
7: /SIDS2/gcgdata/ge
8: /SIDS2/gcgdata/ge
9: /SIDS2/gcgdata/ge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          141
1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    мау
                                                                                                                                                                                                                     Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   908470 seqs, 133250620 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-851-422A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Maximum
Listing
        GenCore version Copyright (c) 1993 - 2003
                                                                                                                                                                                                                                                                                                                                                                                         /SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1993_DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1994_DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1994_DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1995_DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1995_DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1995_DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1999_DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA1999_DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2000_DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2000_DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-emb1/AA2000_DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1980.DAT:*
/SIDS2/gcgdata/geneseg/geneseqp-embl/AA1981.DAT:*
/SIDS2/gcgdata/geneseg/geneseqp-embl/AA1982.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1983.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1984.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1985.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1986.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1988.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1988.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1989.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1991.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1991.DAT:*
/SIDS2/gcgdata/geneseq/geneseqp-embl/AA1991.DAT:*
                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2003, 16:07:45; Search time 53.6471 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Match 100%
first 45 s
      DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gapext 0.5
                                                                                                                                                                                                                       IJ
    AAE18202
AAR34603
AAW1470
AAY49867
AAB13927
AAB13927
AAW177660
AAW11168
AAP91340
AAR13908
AAR13908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             summaries
                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (without alignments)
94.386 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5.1.4_p5_4578
Compugen Ltd.
Sequence of endoso Melittin peptide m Melittin based end Amino acid sequenc Guanidinated melli Melittin for N-ter
                                                                                                                                                                                                                 Description
                                                                                                                                                                              Procytotoxin #4 fo
                                                                                                                                                                                                                                                                                                                                    printed,
                                                                                                                                                                                                                                                                                                                                                           ىو
```

3 66.0 26 22 AAB50842	3 66.0 26 21 AAY44325 66.0 26 22 AAB92169 3 66.0 26 22 AAP32169	3 66.0 26 21 AAB12439 3 66.0 26 21 AAB12439 3 66.0 26 21 AAY91752	3 66.0 26 20 AAW95333 3 66.0 26 21 AAB11034 3 66.0 26 21 AAB17407 3 66.0 26 21 AAB17408	3 66.0 26 19 AAW//3128 3 66.0 26 20 AAY/2019 3 66.0 26 20 AAY/2019	3 66.0 26 19 AAW82879 3 66.0 26 19 AAW82880 3 66.0 26 19 AAW66453 3 66.0 26 19 AAW771674	3 66.0 26 18 AAW35145 3 66.0 26 18 AAW35145 3 66.0 26 18 AAW35146 3 66.0 26 18 AAW35146 3 66.0 26 18 AAW36314	9739 9739 9739 9739 9739 9739 9739 9739	
Mellitin to determ Bee protein calmod Membrane disruptiv	timicrobia gnal trans	Antipathogenic pep Plasmid constructi Cationic peptide M	c bee m lifera logenic	AYELG peptide with Melittin, the acti Melittin. Homo sa Peptide used to ma	athogenic pe athogenic pe nic peptide tin-derived	Honeybee venom mel Melittin-derived p Melittin artibacte Melittin antibacte Honeybee peptide m	. a . Filloof	

ALIGNMENTS

RESULT 1
AAE18202
ID AAE18202
ID AAE18202:
XX
AC AAE18202:
XX
C AAE18202:
XX
C Procytotoxin #4 for treating cancer.
XX
DE Procytotoxin; cytotoxic peptide; epsilon-amino group; cancer; cytostatic;
XX
DE Procytotoxin; cytotoxic peptide; epsilon-amino group; cancer; cytostatic;
XX
DE Procytotoxin; cytotoxic peptide; epsilon-amino group; cancer; cytostatic;
XX
DE Procytotoxin; cytotoxic peptide; epsilon-amino group; cancer; cytostatic;
XX
DE Procytotoxin; cytotoxic peptide; epsilon-amino group; cancer; cytostatic;
XX
DE Procytotoxin; cytotoxic peptide; epsilon-gamma]-Glu)-Arg; where
FT Modified-site 21.23
PMOdified-site 21.23
PMOdified-site 24.26
Inkage between lysine and the gamma carboxyl epsilon-gamma] represents a peptide bond between the epsilon amino group of lysine and arginine*
FT Modified-site 24.26
Inkage between lysine and the gamma carboxyl epsilon amino group of lysine and the gamma carboxyl epsilon amino group of lysine and the gamma carboxyl proup of adjacent glutamate, and a standard peptide
XX
PM W020018577-A2.
XX
PM 15-NOV-2001.

09-MAY-2001;

2001WO-US40690

۲.

```
AAR34603
ID AAR3
XX AAR3
XX Sequ
DT 09-4
XX Sequ
XX Ende
XX Synt
XX W09:
XX W09:
XX M09:
XX M0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                   30-JAN-1992;
30-JAN-1992;
07-APR-1992;
02-SEP-1992;
                                                                Birnstiel
Plank C,
                                                                                                                              (GETH )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsilon-amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, lung or skin. Cytolytic peptide also known as channel-forming peptide, typically disrupt cell membrane, causing cell lysis and death (apoptosis) upon contact. The present sequence is procytotoxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI;
                                                                                                                                                    (BOEH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-AUG-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAR34603;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09-MAY-2000;
16-JUN-2000;
                          WPI; 1993-134470/16
                                                                                                                                                                                                                                                                                                     30-SEP-1991;
30-SEP-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Endosomyolytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAR34603 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yu X,
                                                                                                                                                                                                                                                                                                                                                                          28-SEP-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          W09307283-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (GREE-) GREENVILLE HOSPITAL SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                  15-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wagner
                                                                                                                                   VIND
                                                                                                                                                    GENENTECH INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                ML, Cotten M,
Schmidt WGM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    endosomyolytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Page 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-203063P
2000US-212042P
                                                                                                                                   NORTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₹
                                                                                                                                                                                                                 91US-0767788.
91US-0768039.
92US-0827102.
92US-0827103.
92US-0827103.
92US-0864759.
92US-0937788.
                                                                                                                                                                                                                                                                                                                                                                        92WO-EP02234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          peptide;
                                                                                                                                   CAROLINA
                                                                                                                                                                        INGELHEIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             33pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66.7%;
71.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            endosome; transfection;
                                                                Wagner
                                                                Curiel I
Vagner E,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   36
                                                                                                                                                                           INI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                    Ď
                                                                                                                                                                           GMBH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NO :
                                                              Oberhauser
Zatloukal K;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .1e-09;
                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene transfer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

17

9

```
XPXPX
                                                                                                                                                                                                                                                                                                                                                                                                                        XX OS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 3
AAW01430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       XXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 22
                                                                                                                                                                                                                                                            30-SEP-1991;
30-JAN-1992;
30-JAN-1992;
07-APR-1992;
02-SEP-1992;
         eukaryotic cell by contacting the cell with a compsn. comprising a complex, where the complex comprises a nucleic acid of interest, a substance with affinity for the nucleic acid and an endosomolytic agent, which allows internalisation of the complex into the cell by endocytosis, and is released into the cytoplasm by endosomolysis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            endosomes into the cytoplasm. It can be covalently or non-covalently bound to a nucleic acid affinity substance (NAS) directly or via an NA-binding domain (NA = nucleic acid). The compsns. are esp. used to introduce NA into human cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Compan. for efficient transfection of higher eukaryotic cells contains conjugate of nucleic acid, and affinity substance plue endosomolytic agent, esp. adenovirus, useful e.g. in gene transfer therapy
                                                                        A nucleic acid can
                                                                                                                                                                                                  Birnstiel
                                                                                                                                                                                                                                                                                                                          23-SEP-1992;
30-SEP-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                              endosome;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAW01430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                Example 37; Column
                                                                                                                                                                                                                        (BOEH )
                                                                                                                                                                                                                                                                                                                                                              30-SEP-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Melittin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW01430;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The peptide is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Example;
The present sequence
                                                                                                                       Introduction of nucleic acid complex with nucleic acid aff
                                                                                                                                                                                                                                                                                                                                                                                     20-AUG-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         transfection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GIGAVLKXXXXVLTTGLPALISWIKXXXXRK 31
                                                                                                                                                                                                                                     BOEHRINGER INGELHEIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                      with nucleic
                                                                                                                                                                                                                           GENENTECH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               peptide 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Page 196;
                                                                                                                                                                                    ML, Cotten M, Curi
Schmidt WGM, Wagner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene therapy; non-viral peptide; internalising
                                                                                                                                                                                                                                                            91US-0768039.
92US-0827102.
92US-0827103.
92US-0864759.
92US-0937788.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           endosomyolytic.
                                                                                                                                                                                                                                                                                                                         92US-0948357
91US-0767788
                                                                                                                                                                                                                                                                                                                                                              91US-0767788
                                                        be introduced into the cytoplasm of a higher contacting the cell with a compsn. comprisin
                                                                                              95-96; 109pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               with C-terminal oligo-Lys tail.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   281pp;
ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                              oligolysine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  66.7%;
71.0%;
a melittin peptide
                                                                                                                                                                                    Guriel DT, Oberhagner E, Zatloukal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     German.
                                                                                                                      affinity agent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score
Pred.
                                                                                                                                                                                                                                      INT
                                                                                                                                   into higher eukaryotic cells - as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             It can release the contents
                                                                                                                                                                                                                                      GMBH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94;
NO:
                                                                                                                                                                                                 Oberhauser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 14;
1.2e-08;
                                                                                                                         and
designated
                                                                                                                         endosomolytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                              comprising a finterest, a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     plus
                                                                                                                       agent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ٠.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         factor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
```

Ċ

(

```
RESULT 4
ANY 49867
ID ANY 4
XX AAY 49867
AC AAY 4
XX AAY 6
AX COMP
PR 30---
PR WPI:
PR WPI:
AX (BDE
PA (GET
PR WPI:
AX COMP
PR DA (GET
AX COMP
PR CC inter
CC endd
CC endd
CC endd
CC endd
CC endd
CC comp
CC inter
CC inter
CC inter
CC endd
CC comp

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SXC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                    eukaryotic cell comprises a non-naturally occurring nucleic acid complex, where the nucleic acid complex comprises: (a) a nucleic acid of interest; (b) a substance which binds to nucleic acid; and (c) an endosomolytic agent which is bound to the substance of (b), where the endosomolytic agent is a virus or a virus component which is not an internalising factor for a human cell and where the complex is internalised into the cell by endocytosis, and is released into the cell by endosymolysis. The composition is useful for delivering specific genes into a cell and therefore has applications in gene therapy. Since the method of gene transfer is a physiological method, represented by receptor-mediated endocytosis, it is non-toxic compared to the prior art (viral vectors). The present sequence represents a melittin peptide with an oligolysine C-terminal extension, which is used in an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (BOEH )
(GETH )
(UYNC-)
                                                                                                                                                                                                                                                                                                                                                                                         The present invention describes a composition for the transfection of higher eukaryotic cell which comprises a nucleic acid of interest and endosomolytic agent. The composition for the transfection of a higher
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Zatloukal K, Wagner
Plank C, Oberhauser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example 37; Column 76-77; 117pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Composition for transfection of eukaryotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1999-633329/54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-JAN-1992;
07-APR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-SEP-1992;
30-SEP-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25-MAY-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US5981273-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                transfection; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Endosomolytic; influenza; haemagglutinin; gene transfer; transferrin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Melittin peptide mel 1 with an oligolysine C-terminal extension
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY49867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAY49867 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     is used in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-SEP-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GIGAVLK----VLTTGLPALISWIKRKROOK 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRK 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            l Similarity 71.(
22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BOEHRINGER INGELHEIM INT GENENTECH INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>з</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the transfection of hepatocytes
the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wagner E,
erhauser B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NORTH CAROLINA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          92US-0827102.
92US-0827103.
92US-0864759.
92US-0937788.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91US-0767788
91US-0768039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                92US-094B357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        95US-0450417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      66.7%;
71.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Schmidt WGM,
Cotten M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 94; DB 17;
Pred. No. 1.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GMBH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Birnstiel ML,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cells, useful in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Curiel DT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                            a
a
```

```
RESULT 5
AAB13927
ID AAB1
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ωy
                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sox
Query Match
Best Local S
Matches 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 71.0
Matches 22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-JAN-1992;
30-JAN-1992;
07-APR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23-SEP-1992;
30-SEP-1991;
30-SEP-1991;
                                                                          The present invention relates to a composition for the transfection of higher eukaryotic cells. The nucleic acid of interest is contained in an endosome which is internalised into the cells. The nucleic acid is then released into the cytoplasm from the endosome by an endosomolytic agent. The present sequence is the melittin peptide with an oligo lysine tail, designated mel 1. The composition of the invention is useful in assays for determining the host immune response to a given antigen and also in gene therapy. The composition is broadly applicable making it possible to make use of a positive effect of viruses to cells which do not have any receptor for the virus.
                                                                                                                                                                                                                                                                  Novel composition for introducing nucleic acid complexes into higher eukaryotic cells comprises a non-naturally occurring nucleic acid complex containing the nucleic acid of interest and an endosomolytic
                                                                                                                                                                                                                                                                                                                                                                                                   (BOEH )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                    agent
                                                                                                                                                                                                                                                                                                                                              Zatloukal K, Wagner E, Plank C, Oberhauser B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Endosomolytic; gene therapy; transfection; melittin; mel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15-NOV-2000
                                                    Sequence
                                                                                                                                                                                                                          Example 37; Column 74; 114pp; English.
                                                                                                                                                                                                                                                                                                                                                                                     (UYNC-) UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25-MAY-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Melittin peptide mel 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAB13927 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GIGAVLK----VLTTGLPALISWIKRKRQQK 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRK 31
                                                                                                                                                                                                                                                                                                                                                                                                 BOEHRINGER INGELHEIM INT GMBH GENENTECH INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
6
                                                   36
                                                                                                                                                                                                                                                                                                                                                                                       NORTH CAROLINA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      92US-0827102.
92US-0827103.
92US-0864759.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91US-0768039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91US-0767788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9208-0948357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  95US-0449754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 66.78;
                                                                                                                                                                                                                                                                                                                                              Schmidt WG,
Cotten M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>-</u>
Score 94; DB Pred. No. 1.201; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 94; DB 20;
Pred. No. 1.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                             Birnstiel ML,
                          DB 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.
                       Length 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                             Curiel DT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
```

l Similarity 22; Conserv

Conservative

..2e-08; 4;

Indels

4.

Gaps

۲

ð

```
밁
   Matches
                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-JAN-1992;
30-JAN-1992;
07-APR-1992;
                                                                                                                                    The invention relates to the use of an endosomolytic viral peptide in a composition for the transfection of a high eukaryotic cell with a nucleic acid complex. The peptide has the ability of being internalized into the higher eukaryotic cell, either on its own or as a component of the nucleic acid complex, where it has the ability to release contents of the endosome, in which the nucleic acid complex is located after entering the higher eukaryotic cell, into the cycoplasm. The composition may be applied on tumour cells for use as a cancer vaccine, where the DNA to be introduced into the tumour cells codes for an immune modulating substance such as interleukin-2. The composition is also useful in somatic gene therapy and in the treatment of cystic fibrosis. Use of the endosomolytic peptide with the conjugate-DNA complexes increases the efficiency of the entransfection system much better than the use of the lysosomatropic substances alone. The concent recovery contents in the conjugate-DNA complexes increases the efficiency of the entransfection system much better than the use of the lysosomatropic substances alone.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LT 6
7660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wagner E,
Zatloukal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (BOEH )
(GETH )
(UYNC-)
                                                                                                                                                                                                                                                                                                                                                                                         Transfection of nucleic acid complexes into eukaryotic cells by compositions containing endosomolytic viral peptide, useful in somatic gene therapy and in the treatment of cystic fibrosis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Endosomolytic; transfection; tumour; cancer; vaccine; interleukin-2;
immune modulation; gene therapy; cystic fibrosis; lysosomatropic;
melittin; antimucolytic; respiratory.
                                                                Sequence
                                                                                                                           substances alone. The present sequence represents a melittin peptide
                                                                                                                                                                                                                                                                                                                                                            Example 37; Column 74; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2000-160379/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-SEP-1992;
30-SEP-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         08-FEB-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US6022735-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Melittin peptide mel 1 with oligolysine tail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAY77660;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAY77660 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-SEP-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25-MAY-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12-MAY-2000
                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GIGAVLKXXXXVLTTGLPALISWIKXXXXRK 31
                                                                                                              an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENENTECH INC.
UNIV NORTH CAROLINA
                                                                                                            oligolysine tail, synthesised
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BOEHRINGER INGELHEIM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Plank C, Birr
K, Oberhauser
                                                                36
   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               91US-0768039.
92US-0827102.
92US-0827103.
92US-0864759.
92US-0937788.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             92US-0948357
91US-0767788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          95US-0449741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Birnstiel ML,
                66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Β,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          36
   <u>,,</u>
                 Score 94; DB 21;
Pred. No. 1.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cotten
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₹
   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GMBH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Schmidt WGM, M;
                                                                                                            for use in transfection of
                                DB 21;
   4
                             Length 36
   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Curiel DT;
 4
Gaps
 1;
```

1

9

Query Match

66.78;

Score

94;

DВ 22;

Length 36;

```
RESULT 7
AAU11168
 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δõ
                                      The invention relates to a transfection kit comprising a carrier which has first container containing substance that has affinity for nucleic acid and is optionally coupled to internalising factor for higher centaining agent with ability of being internalised into a eukaryotic cell (e.g. an endosomolytic peptide) and second carrier containing agent with ability of being internalised into a eukaryotic cell per se or as a component of a nucleic acid complex, and of releasing the contents of the endosome where the nucleic acid complex is present, into the cytoplasm. Also included is a transfection kit comprising a carrier which has in close confinement one or more containers, where first container contains a biotin-modified endosomolytic agent and a second container containing a streptavidin-modified substance having affinity for nucleic acid. The kits are useful for introducing nucleic acids into higher enlarged the cells. The present sequence is an endosomolytic peptide addition of lysine residues and is used as a gene transfer peptide in an experiment demonstrating the method underlying the kit of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (BOEH )
(GETH )
(UYNC-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25-MAY-1995;
30-SEP-1991;
30-SEP-1991;
                                                                                                                                                                                                                                                                                                                                                         Transfection kit, useful for introducing nucleic acids into cells, comprises substance that has affinity for nucleic acid and agent which is internalised into higher eukaryotic cell and releases components of
Sequence
                                                                                                                                                                                                                                                                                                               Example 37; Column 76; 119pp; English.
                                                                                                                                                                                                                                                                                                                                             cell's endosome into cytoplasm
                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2001-615350/71
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Oberhauser B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Curiel DT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-JAN-1992;
07-APR-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Melittin; endosomolytic peptide; gene therapy; me transfection kit; internalising factor; endosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAU11168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAU11168 standard; peptide;
                              Invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-SEP-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-SEP-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14 - AUG - 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Melittin-based endosomolytic peptide mell.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GIGAVLKXXXXVLTTGLPALISWIKXXXXRK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BOEHRINGER INGELHEIM INT GENENTECH INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VIND
 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Birnstiel ML,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NORTH CAROLINA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
 A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       92US-0827102.
92US-0827103.
92US-0864759.
92US-0937788.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                95US-0449754.
91US-0465646.
91US-0767788.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Schmidt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 91US-0768039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0465646
                                                                                                                                                                                                                                                                                                                                                                                                                                                    WGM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cotten
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wagner E,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mel1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zatloukal K,
                                                                                                                                                                                                            and of releasing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plank
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
```

1

밁 Qy

```
RESULT 8
AAP91340
                                                                                                                                                                                     RESULT 9
AAR13908
                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity 71.0%; Matches 22; Conservative .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Transformed plants contg. heterolgous gene - expressing antimicrobial agent, or polypeptide high in essential amino acids
                                                                                           Guanidinated mellitin
                                                                                                                                                                                                                                                                                                                                                                                     Amino acid sequence of Melittin as an exemplary lytic peptide for use as an antimicrobial peptide contemplated for use in plant (trichophyte) transformants in the invention. Melittins are generally less preferred in the invention because of their lack of specificity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   02-NOV-1988;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAP91340;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAP91340 standard; peptide;
                                                                 B-cell; T-cell;
                                                                                                                                                                       AAR13908 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Table I; ; 56pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1989-165650/22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Jaynes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (LOUU ) LOUISIANA STATE UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-NOV-1987;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18-MAY-1989.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       W08904371-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Melittin; lytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Amino acid sequence of Melittin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19-MAR-1990
 Modified-site
                                       Synthetic
                                                                                                                      27-NOV-1991
                                                                                                                                                AAR13908
                                                                                                                                                                                                                                                                                                                                                                             bacteria and fungi.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                trichophyte.
                                                                                                                                                                                                                                        1 GIGAVLK----VLTTGLPALISWIK----RK----RQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GIGAVLK----VLTTGLPALISWIKRKRQQK 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRK 31
                                                                                                                                                                                                                                                                   1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                                                                                                                                                                                                                                                                                                                                                  26 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Derrick
                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         87US-0115941.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   806c0sn-om88
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            peptide;
                                                                 epitope;
                                                                                                                                                                                                                                                                                                          66.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            antimicrobial peptide;
                                                                 carrier; hapten
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>,,</u>
                                                                                                                                                                         26
                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                          Score 93; DB 10;
Pred. No. 1.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. 1.2e-08;
                                                                                                                                                                         ⋛
                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                           26
                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              disease-resistant
                                                                                                                                                                                                                                                                                                                      Length 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                             12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4;
                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                         for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          μ;
                                                                                                                                                                                                                                                                                             W
                                                                                                                                                                                                              RESULT 10
AAR45114
 В
                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                             S X C C C C C C C X S X F F F F X R X R X R X F X D X X F F F F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                Mellitin is a peptide isolated from bee venom. Analogues can be used as carriers for haptens which are B-cell epitopes. The analogue must contain at least one T cell epitope. The epstion-amino gps. of the lysine residues at the 7, 21 and 23 positions are converted to guanidino gps and that at the C-terminal is blocked. The analogues may be truncated from the N-terminal to remove the hydrophilic residues 20-26.
                                               Ion channel; magainin; PGLa; XPF; CPF; cecropin; sarcotoxin; amphiphilic; hydrophobic; hydrophilic; lipophilic; growth; inhibition; target cell; virus; virally-infected cell; antimicrobial; antiviral; antitumour; antiparasitic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Binding-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Immunogenic mols. contg. a T-cell
amphiphilic peptide carrier bound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Binding-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Modified-site
            Synthetic
                                     spermicide;
                                                                                                                   Melittin for
                                                                                                                                                                                                 AAR45114 standard;
                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 7; Fig 1; 36pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    epitope.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1991-281140/38.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25-JUL-1991.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (UYRO-) ROCKEFELLER UNIV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15-JAN-1991;
19-JAN-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19-JAN-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO9110676-A
                                                                                                                                                                                                                                                                1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ
|||||||| || ||||||||||| || || || || 1
1 GIGAVLK----VLTTGLPALISWIK----RK----RQQ
                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                      Similarity 68.4
26; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PF,
                                                                                                                                                                                                                                                                                                                                                                           26 AA;
                                     wound healing; burn; infection
                                                                                                                   N-terminal lipophilic substitution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              King TP,
                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    91US-0641469
90US-0467386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91WO-US00413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /label= B cell epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /label= T cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label≖ hinge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'label-
                                                                                                                                                                                                 peptide;
                                                                                                                                                                                                                                                                                                                                 66.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kochoumian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       lactopyranoside moiety.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                guanidinilated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           guanidinilated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     guanidinilated
                                                                                                                                                                                                   26
                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                 Score 93; DB 12;
Pred. No. 1.2e-08
                                                                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   epitope
                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               epitope - comprising
to a hapten which is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŗ
                                                                                                                                                                                                                                                                                                                      .2e-08;
les 0;
                                                                                                                                                                                                                                                                   26
                                                                                                                                                                                                                                                                                             38
```

an a B-cell

Length 26; Indels

12;

Gaps

Ψ

밁 δÃ

```
AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC XXX AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAR35383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Melittin is an amphipathic peptide and an example of X. The N-terminal substd. peptides and proteins have increased biological activity as compared with unsubstd. peptides or proteins or peptides substd. at the N-terminal with an acetyl sp. They can be used as antimicrobial agents, antiviral agents, antiviral agents, antiparasitic agents or spermicides and can also exhibit other bloactive functions. They can also be used in promoting or stimulating wound healing, for the treatment of external burns and to treat and/or prevent skin and burn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A novel compsn. for inhibiting growth of a target cell, virus virally-infected cell comprises a peptide of formula T-N(W)-X X is a biologically active amphiphilic ion channel-forming peptor protein; pref. a magalin peptide, a PGLa peptide, a XPF peptide, a Cerropin or a sarcotoxin. N is the nitrogen of the N-terminal amino group. T is a lipophilic molety; pref. R-CO, where R is a 2-16C hydrocarbon (alkyl or aromatic or alkylaromatic).
                                                                                                                                                                                                                                Adverse oral conditions; amphipathic; anti-bacterial; anti-viral; anti-fungal; dental plaque; dental caries; periodontal disease; glngivitis; ionophore; ion-channel forming; honeybee; venom.
09-JUL-1992;
                                                       04-FEB-1993.
                                                                                                                                                                            Apis mellifera
                                                                                                                                                                                                                                                                                                                                                     Melittin used to treat oral infections.
                                                                                                                                                                                                                                                                                                                                                                                                                  07-JUN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             T is pref. an octanoyl group. W is T or hydrogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Peptide(s) or proteins with an N-terminal lipophilic substit. used for inhibiting growth of target cell, virus or virally-infected cell
                                                                                                                    WO9301723-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAR35383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR35383 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Page 39; 113pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1993-405419/50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kari U;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (MAGA-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-MAY-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9324138-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     infections or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         l Similarity
26; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MAGAININ PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     eye
   92WO-US05757.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92US-0891201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               93WO-US05192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     infections
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               66.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 93; DB 14;
Pred. No. 1.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      w
T
```

```
RESULT 12
AAR39759
ID AAR39
₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Melittin is an amphipathic peptide which is isolated from honeybee venom. The peptide is known to be cycloytic (see Hoppe-Seyler's Zeitschrift Physiol. Chem. 348, 37-50, 1987) and is a preferred peptide for use in preventing or treating adverse oral conditions. The peptide is suitable for use in oral compositions to treat or prevent periodontal disease, plaque, dental caries, halitosis and gingivitis. The anti-bacterial action will also be useful against bacteria associated with dental implant infections and the peptides
                                                                 Deletion and substitution peptide analogues of melittin antibiotics, antifungal agents, antitumour agents, antivagents or to stimulate wound healing
                                                                                                                  WPI; 1993-264689/33.
                                                                                                                                                                                                                                                                                                           Melittin; amphipathic; honeybee venom; cytolytic; antifungal;
antibiotic; antiparasitic; antimicrobial; spermicidal; antiviral;
                                                                                                                                                                                                                                                                                                                                             Melittin peptide
                                                                                                                                                                                                                                                                                                                                                                                               AAR39759;
                                            Disclosure;
                                                                                                                                          Blondelle SE,
                                                                                                                                                                                        22-JAN-1991;
                                                                                                                                                                                                                                                               US5235038-A.
                                                                                                                                                                                                                                                                                     Apis mellifera
                                                                                                                                                                                                                                                                                                                                                                       08-FEB-1994
                                                                                                                                                                                                                                                                                                                                                                                                                     AAR39759 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 can stimulate the healing of wounds in the oral cavity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1993-058434/07.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Berkowitz B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25-յսւ-1991;
                                                                                                                                                                                                               22-JAN-1991;
                                                                                                                                                                                                                                       10-AUG-1993.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (MAGA-) MAGAININ PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           periodontal disease, plaque, dental caries, gingivitis, etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GIGAVLK----VLTTGLPALISWIK----RK----RQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            l Similarity
26; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Page 130; 143pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26 AA;
                                           Page 1; 36pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                 PINES INST MOLECULAR STUDIES
                                                                                                                                        Houghten
                                                                                                                                                                                        91US-0643343.
                                                                                                                                                                                                               91US-0643343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       91US-0735070.
                                                                                                                                                                                                                                                                                                                                                                                                                     peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66.0%;
68.4%;
                                                                                                                                          RA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 93; DB : Pred. No. 1.2e 
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                      26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                      Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 14;
1.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                              antiviral
                                                                                          used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'n
```

The peptide melittin (AAR39759) from honeybee venom was used to produce deletion analogues (AAR39759-R39783) and substitution analogues (AAR39784-R39890) (AAR38827-R38839). The peptides can

be

used

RESULT 14

```
RRESULT 13
AAR5599
ID AAR5599
ID AAR599
ID AAR599
AC AAR59
AC AAR5
                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                             Query Match
Best Local
                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ion channel forming peptide; tumour; skin disease; mallignancy; melanoma; carcinoma; basal cell; squamous cell; magainin; PGLa; CPF peptides; cercopins; sarcotoxin; mellitin; apidocin; defensins; major basic protein; bacteria-permeahility increase.
                                                                                                                                                                                                                                                                              such therapy include magainin, PGLa or CPF peptides; cercopins, sarcotoxins, mellitin, apidocins, defensins, major basic protein of eosimophils; bacteria-permeability increasing protein and perforin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI;
                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                The peptide is used to treat dermatological malignancies. It may be used to treat especially melanoma but also basal cell and squamous cell carcinomas. It can be used together with an ion which also inhibits/prevents growth of the target cell. Peptides used for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Page 122; 136pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Treating skin cancer with ion channel forming peptide(s) - e magainins, mellitin etc., specifically for treating melanoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Jacob LS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (MAGA-) MAGAININ PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             03-DEC-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 03-DEC-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09-JUN-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO9412206-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Apis mellifera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAR55989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR55989 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               spermicidal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to inhibit growth of the target cell, thus exhibiting antimicrobial, anti-viral, antibiotic, anti-tumor, antiparasitic, antifungal and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ion channel forming peptide (mellittin).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19-DEC-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GIGAVLK----VLTTGLPALISWIK----RK----RQQ 26
  -
                                                   1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ
GIGAVLK----VLTTGLPALISWIK----RK----RQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                Similarity
                                                                                                                                                                                                                                                              AAQ55876-Q55997.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Maloy WL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26 AA;
                                                                                                                                                                                                          26 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               properties.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9205-0984957.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93WO-US11885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              66.0%;
68.4%;
                                                                                                                                66.0%;
                                                                                                     Score 93; DB
Pred. No. 1.2e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 93;
Pred. No.
                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                             DB 15;
1.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BG
                                                   38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  38
26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                   Length 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             e.g.
                                                                                                     12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
                                                                                                       w
--
```

```
RESULT 15
                                                                                                                                                                                                                                                                                                     р
                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                          DR
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PN
AAR50565
                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The sequences given in AAR50452-568 represent amphiphilic, ion formi peptides which may be used to treat gynaecological malignancy. These peptides are based on magianin, PGDLC, XPF or CPF, a cecropin, sarcotoxin, melittin, an apidaecin, a defensin, major basic protein eosinophils or a bacterial permeability increasing protein. These peptides are esp. used to treat ovarian, esp. stage IC, uterine or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Amphiphilic; ion forming; gynaecological malignancy; magainin XPF; CPF; cecropin; sarcotoxin; melittin; apidaecin; defensin major basic protein; eosinophils; uterine; cervical; cancer; bacterial permeability increasing protein; ovarian; stage IC.
                                                                     Amphiphilic peptide; aprotic organic solvent; alcohol; antitumour; antibiotic; antimicrobial; antifungal; antiparasitic; anticancer; antiviral; human; animal; plant; ion-channel; forming peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Treating gynaecological tumours with amphiphilic peptide(s) which form ion channels, e.g. magainin or PGLa peptide(s), partic. for treating ovarian, uterine or cervical cancers.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAR50565 standard; peptide;
            WO9405308-A
                                                                                                                                                               17-OCT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Page 117; 130pp; English. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 1994-100851/12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Baker MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31-AUG-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-AUG-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO9405313-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Amphiphillic
                                         Apis mellifera
                                                                                                                                 Amphiphilic peptide #95, melittin derivative.
                                                                                                                                                                                             AAR50430;
                                                                                                                                                                                                                         AAR50430 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (MAGA-) MAGAININ PHARM INC
                                                                                                                                                                                                                                                                                                                                1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ
                                                                                                                                                                                                                                                                                                     GIGAVLK----VLTTGLPALISWIK----RK----RQQ
                                                                                                                                                                                                                                                                                                                                                               l Similarity
26; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                     cancers.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Jacob LS,
                                                                                                                                                                                                                                                                                                                                                                                                                          26 AA;
                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          peptide #114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9205-0937462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93WO-US07798
                                                                                                                                                                                                                        peptide;
                                                                                                                                                                                                                                                                                                                                                                            66.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Maloy WL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26
                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                           26
                                                                                                                                                                                                                                                                                                                                                                            Score 93;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₿
                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                             DB 15;
                                                                                                                                                                                                                                                                                                                                                                            .2e-08;
                                                                                                                                                                                                                                                                                                     26
                                                                                                                                                                                                                                                                                                                                 38
                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                         Length 26;
                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              magainin;
defensin;
                                                                                                                                                                                                                                                                                                                                                               12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             forming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PGLa;
                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    O a
```

w ••

```
Search completed: May 9, 2003, 16:15:35 Job time: 54.6471 secs
                                                                        В
                                                                                                        ş
                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 26; Conserv
                                                                                                                                                                                                                                        The sequences given in AAR50336-451 are amphiphilic peptides which were isolated by the method of the invention. A material containing amphiphilic peptides such as these, was treated with a mixt. of aprotic organic solvent and alcohol to form a single miscible solution. This solution was then treated with a aqueous solution to form an aqueous phase solution containing the peptides and an organic solvent phase, and the peptides were isolated from the aqueous phase. The isolated peptides may be useful as antibiotic, antimicrobial, antifungal, antiparasitic, antitumour, anticancer, and/or antiviral agents for treatment of humans, animals or plants. These peptides are esp. ion-channel forming peptides which enable biologically active ions to enter cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Purifying amphiphilic protein or peptide by solvent extn. - partic. for recombinant, ion-channel forming peptide(s) such as magainins, avoids use of chaotropic agents.
                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Page 117; 135pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1994-100846/12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Williams JI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (MAGA-) MAGAININ PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-AUG-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13-AUG-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17-MAR-1994.
                                                                                        1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                                                                      1 GIGAVLK----VLTTGLPALISWIK----RK----RQQ 26
                                                                                                                                                                                                               26 AA;
                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    92US-0936504.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93WO-US07694.
                                                                                                                                                           66.0%;
68.4%;
                                                                                                                                         Score 93; DB 15; I
Pred. No. 1.2e-08;
0; Mismatches 0;
                                                                                                                                                                     Length 26;
                                                                                                                                          Indels
                                                                                                                                          12;
                                                                                                                                         Gaps
                                                                                                                                          w
••
```

```
Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                     Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                         ď
                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Issued_Patents_AA:*

1: /cgn2_6/ptodata/1

2: /cgn2_6/ptodata/1

3: /cgn2_6/ptodata/1

4: /cgn2_6/ptodata/1

5: /cgn2_6/ptodata/1

6: /cgn2_6/ptodata/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                        Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-851-422A-2
141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Мау
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      262574 seqs, 29422922 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gapop 10.0 ,
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/FCTUS_COMB.pep:*
/cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9, 2003, 16:13:10 ; Search time 13.7843 Seconds (without alignments) 81.112 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                        Length
\\
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version 5.1.4_p5_4578 (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gapext 0
                   US-07-948-357-12
US-08-449-741-12
US-08-449-741-12
US-08-449-754-12
US-09-465-646-12
US-07-643-343A-1
US-07-626-589-3
US-08-236-410-3
US-08-236-410-3
US-08-236-410-3
US-08-465-325-9
US-08-434-120-114
US-08-465-325-9
US-08-465-325-9
US-08-467-623-2
US-08-467-623-2
US-08-468-294-19
US-08-468-294-19
US-08-468-294-19
US-08-181-253-3
US-08-467-623-3
US-08-467-623-3
US-08-467-623-3
US-08-467-623-3
US-08-467-623-3
US-08-467-623-3
US-08-468-294-19
US-08-782-997A-4
US-08-984-294-19
                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
         Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                      Sequence
Sequence
Sequence
                                                                                                                                                                                   Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                       Description
                                                                                                                                                           Sequence
Sequence
                                                                                               Sequence.
                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                            Sequence
                                 93 Appl
7 Appli
5 Appli
11 Appl
11 Appli
1 Appli
3 Appli
34 Appli
34 Appli
14 Appli
15 Appli
16 Appli
17 Appli
18 Appli
18 Appli
19 Appli
19 Appli
                                                                                                                                                                                               3, Appli
8, Appli
                                                                                                                                                                                                                                                 1, Appli
3, Appli
                                                                                                                                                                                                                                                                          12, Appl
12, Appl
                                                                                                                                                                                                                         Appli
Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 1
US-07-948-357-12
```

	45	44	43	42	41	40	39	38	37	36	<u>ა</u> 5	34	ω u	32	31	30	29	28
	92	92	92	92	92	92	92	92	92	92	92	92	92	93	93	93	93	93
	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	66.0	66.0	66.0	. 66.0	66.0
	26	26	26	26	26	26	26	25	25	25	25	24	24	28	26	26	26	26
	-		,	۳,	ப	_	<u>-</u>	<u>. </u>	Н	_	Н	4	N	w	4	4	4	4
AT TOMBUNDO	US-08-295-086-1	US-08-141-324-7	US-07-643-343A-45	US-07-643-343A-44	US-07-643-343A-43	US-07-643-343A-42	US-07-643-343A-41	US-07-643-343A-25	US-07-643-343A-24	US-07-643-343A-23	US-07-643-343A-22	US-09-285-070-2	US-08-553-271-2	US-08-118-055-11	US-09-316-919-50	US-08-842-322-28	US-09-115-737-93	US-09-319-730-13
	Sequence 1, Appli	Sequence 7, Appli	•	•	-	•	-	Sequence 25, Appl	-	•	Sequence 22, Appl	Sequence 2, Appli	Sequence 2, Appli	•	Sequence 50, Appl	~	Sequence 93, Appl	Sequence 13, Appl

ALIGNMENTS

```
; MOLECULE TYPE: US-07-948-357-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 12, Application US/07948357 Patent No. 5547932
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                             MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/948,357
FILING DATE: 19920923
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: ESMODIA, ROBERT W.
REGISTRATION NUMBER: 32,893
REFERENCE/DOCKET NUMBER: 0652.09400
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                          TELEPHONE: (202) 466-0800
TELEFAX: (202) 833-8716
INFORMATION FOR SEQ ID NO: 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 36 amino acids
TYPE: AMINO ACID
STRANDEDNESS: single
TOPOLOGY: both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Curiel, David T. APPLICANT: Birnstiel, Max L. APPLICANT: Cotten, Matthew APPLICANT: Wagner, Ernst APPLICANT: Zatloukal, Kurt APPLICANT: Plank, Christian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZIP: 20036
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Plank, Christian
APPLICANT: Oberhauser, Berndt
APPLICANT: Schmidt, Walter G.M.
TITLE OF INVENTION: Composition for Introducing Nucleic Acid
TITLE OF INVENTION: Complexes Into Higher Eucaryotic Cells
NUMBER OF SEQUENCES: 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET: 1225 Con
CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1225 Connecticut Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Curiel, David T. Birnstiel, Max L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sterne, Kessler, Goldstein & Fox
                                                                                   peptide
    66.78;
71.08;
  Score
Pred.
                                                                                                                                                                                                                                                                                             0652.0940004
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                               #1
                       Length
```

В

```
US-08-449-741-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-450-417-12
                                 Sequence 12, Application US/08449741 Patent No. 6022735
                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION NUMBER: US/07/
APPLICATION NUMBER: US/07/
FILING DATE: 19920923
ATTORNEY/AGENT INFORMATION:
NAME: ESMOND, ROBERT W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
 tent No. 6022.
Tent No. 6022.
Tent No. 6022.
Tent No. 6022.
                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: (202) 833-87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM FC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tent No.
APPLICANT:
                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 36 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Schmidt, Walter G.M.
TITLE OF INVENTION: Composition for Introducing Nucleic Acid
TITLE OF INVENTION: Complexes Into Higher Eucaryotic Cells
                                                                                                                                                                                                                                                                                       MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: Washington STATE: D.C.
                                                                                                                                                                                                    Local Similarity
hes 22; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: Esmond, Robert W. REGISTRATION NUMBER: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                  1 GIGAVLK----VLTTGLPALISWIKRKROOK 27
                                                                                                                                                                   1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRK 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRK 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GIGAVLK----VLTTGLPALISWIKRKRQQK 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/08450417
981273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E: Sterne, Kessler, Goldstein & Fox 1225 Connecticut Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Oberhauser, Berndt
                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Plank, Christian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Zatloukal, Kurt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wagner, Ernst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cotten, Matthew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Curiel, David T. Birnstiel, Max L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                        both
                                                                                                                                                                                                                                                                                                                                                                                                       (202) 466-0800
202) 833-8716
                                                                                                                                                                                                                                                                                       peptide
                                                                                                                                                                                                                    66.78;
71.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/450,417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US/07/948,357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32,893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <del>-</del>-

    Mismatches

                                                                                                                                                                                                                                                                                                                                                                                                                                                          0652.0940004
                                                                                                                                                                                                                  Score 94; [
Pred. No. 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                    .9e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4.
                                                                                                                                                                                                    4; Indels
                                                                                                                                                                                                                                  Length 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                   4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 36 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: both
MOLECULE TYPE: peptide
US-08-449-741-12
                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                     US-08-449-754-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 22; Conserv
                                                                                                                                                                                                                                                                                                     Patent No.
                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (202) 371-2540 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                 APPLICANT:
APPLICANT:
                                                                         APPLICANT: Oberhauser, Berndt
APPLICANT: Schmidt, Walter G.M.
TITLE OF INVENTION: Composition for Introducing Nucleic Acid
TITLE OF INVENTION: Complexes Into Higher Eucaryotic Cells
NUMBER OF SEQUENCES: 13
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE: (202) 371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Fleshner, Raz E.
REGISTRATION NUMBER: 34,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Schmidt, Walter G.M.
TITLE OF INVENTION: Composition for Introducing Nucleic Acid
TITLE OF INVENTION: Complexes Into Higher Eucaryotic Cells
NUMBER OF SEQUENCES: 13
ADDRESSES: GYPTERSS:
                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/08/449,741
FILING DATE: 25-MAY-1995
CLASSIFICATION: 514
                        STREET: 1225 Con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 20005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Washington
                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                    1 GIGAVLK----VLTTGLPALISWIKRKROOK 27
                                                                                                                                                                                                                                                                                                                                                                                                                         1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRK 31
                                                                                                                                                                                                                                                                                     3 12, 75
6077663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D.C.
                                                                                                                                                                                                                                                                                                                     Application US/08449754
                                           1225 Connecticut Avenue
                                                                                                                                                                                             Cotten, Matthew Wagner, Ernst Zatloukal, Kurt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E: Sterne, Kessler, Goldstein & Fox 1100 New York Ave., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   U.S.A.
                                                                                                                                                                                 Plank, Christian
                                                                                                                                                                                                                                                    Birnstiel, Max L.
                                                                                                                                                                                                                                                                Curiel, David T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Oberhauser, Berndt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Plank, Christian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wagner,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Birnstiel, Max L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cotten, Matthew
                                                             Sterne, Kessler, Goldstein & Fox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ernst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66.7%;
71.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34,331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0652.0940007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 94; DB 3;
Pred. No. 5.9e-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .9e-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 36;
```

4.

Gaps

ļ,

밁 οy

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; MOLECULE TYPE: peptide US-08-449-754-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-465-646-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Patent No. 62/402
Patent No. 62/402
Patent No. 62/402
Patent No. 62/402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity Matches 22; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/07/948,357
FILING DATE: 1992-09-23
ATTORNEY/AGENT INFORMATION:
NAME: ESMOND, ROBERT W.
REGISTRATION NUMBER: 32,893
REFERENCE/DOCKET NUMBER: 0652.09400
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 466-0800
TELEPHONE: (202) 466-0800
TELEFAX: (202) 833-6716
INFORMATION FOR SEO ID NO: 12:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (202) 833-8710
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 36 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                 CLASSIFICATION: PRIOR APPLICATION DATA:
                                                                                      SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/465,646
                                                                                                                                                                             COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                         MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: amino acid
STRANDEDNESS: sin
TOPOLOGY: both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
APPLICATION NUMBER: 08/44 FILING DATE: May 25, 1995
                                                                                                                                                                                                                                                       STATE: D.C.
                                                                                                                                                                                                                                                                                         STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER:
                                                                       FILING DATE:
                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GIGAVLK----VLTTGLPALISWIKRKRQQK 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GIGAVLKXXXXVLTTGLPALISWIKXXXXRK 31
                                                                                                                                                                                                                                                                        Washington
                                                                                                                                                                                                                       20005-3934
                                                                                                                                                                                                                                                                                                                                                                                T: Oberhauser, Berndt
T: Schmidt, Walter G.M.
INVENTION: COMPOSITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Application US/09465646
                                                                                                                                                                                                                                                                                       E: Sterne, Kessler, Goldstein & Fox P.L.L.C
                                                                                                                                                                                                                                      U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                  Zatloukal, Kurt
Plank, Christian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cotten, Matthew
Wagner, Ernst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Birnstiel, Max L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Curiel, David T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                         HEREWITH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             single
                                                                                                                                                                                                                                                                                                                                                           COMPOSITION FOR INTRODUCING NUCLEIC ACID COMPLEXES INTO HIGHER EUCARYOTIC CELLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 66.7%;
                  08/449,754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/08/449,754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0652.0940004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 94; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 3;
5.9e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
```

```
밁
                                                                                                                                                                                                                                                                                                                  US-07-643-343A-1
                                                                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; MOLECULE TYPE: peptide US-09-465-646-12
                                                                                                                                                                                                                                                                                   Sequence 1, Application US/07643343A Patent No. 5235038
                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local 9
                                                                                                                                                                                                                                                                         GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (202) 371-6566 INFORMATION FOR SEQ ID NO:
COMPUTER READABLE FORM: MEDIUM TYPE: 3.5 inch diskette
                                                                                                                                                                                                             APPLICANT: Houghten, TITLE OF INVENTION: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION: TELEPHONE: (202) 371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: (
FILING DATE: September CLASSIFICATION:
                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 36 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 07/827,103 FILING DATE: January 30, 1992
                                                                                 COUNTRY: U
ZIP: 07068
                                                                                                                       STREET: 6 Becke
CITY: Roseland
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: Kamage, Andrea J.
REGISTRATION NUMBER: 43,703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
                                                                                                            STATE:
                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER:
                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity 71.(es 22; Conservative
                                                                                                                                                                                                                                                                       INFORMATION:
                                                                                                            New Jersey
                                                                                                                                      6 Becker Farm Road
                                                                                              USA
                                                                                                                                                                                                                                                       Blondelle,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       both
                                     IBM PS/2
                                                                                                                                                     Carella, Byrne, Bain, Gilfillan, Cecchi & Stewart
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         September 30,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        January 30, 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                September 30, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  January
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          UMBER: 07/864,759
April 7, 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     September
                                                                                                                                                                                                                                                                                                                                                                                                                                               66.7%;
71.0%;
                                                                                                                                                                                                           , Richard A.

Deletion and Substitution
Analogues of Melittin Peptide
                        PC-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07/937,788
nber 2, 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07/827,102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07/768,039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                07/767,788
                                                                                                                                                                                                                                                       Sylvie E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30, 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0652.0940009
                                                                                                                                                                                                                                                                                                                                                                                                                                Score 94; DB
Pred. No. 5.9e
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                               9e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
```

1;

CURRENT APPLICATION DATA:

ÚS/07/643,343A

PRIOR APPLICATION DATA:

APPLICATION NUMBER: Ú: FILING DATE: .19910122 CLASSIFICATION: 530

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                US-07-626-589-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-07-643-343A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 66.0
Best Local Similarity 68.0
Matches 26; Conservative
                                                                                                                                                                                                                                                                                                                                                                             Sequence 3, Applic Patent No. 5294698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: 201-994-1744
NFORMATION FOR SEQ ID NO:
                                                                                                                    COMPUTER READABLE FORM:
                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 1
                                                                                                                                                                                                                                                                                                        APPLICANT: Bomalaski, John S
APPLICANT: Clark, Michael A.
APPLICANT: Shorr, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGINAL SOURCE:
                                 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PUBLICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 26 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                      TITLE OF INVENTION: HUMAN PHOSPH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VOLUME: 348
PAGES: 37-50
DATE: 1987
APPLICATION NUMBER: U: FILING DATE: 19901206
                                                             MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                       COUNTRY: U
ZIP: 19103
                                                                                                                                                                           STATE:
                                                                                                                                                                                     STREET: 1650 Market
CITY: Philadelphia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GIGAVLKXXXXVLTTGLPALISWIKXXXXKKXXXXRQQ 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Olstein, Elliot M.
REGISTRATION NUMBER: 24,025
REFERENCE/DOCKET NUMBER: 42
                                                   SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Apis mellifera
                                                                                                                                                                                                                          ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GIGAVLK----VLTTGLPALISWIK----RK----RQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                             INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AMINO ACID
                                                                                                                                                                       PΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequenzanalyse des Melittins aus den tryptischen und peptischen Spaltst cken.
                                                                                                                                                                                                                                                                                                                                                                                              Application US/07626589
                                                                                                                                                                                                       E: One Liberty Place - 46th Floor
                                                                                                                                                       SD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Physiol. Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Habermann, E. Jentsch, J.
                                                                                                                                                                                                                                                                                                                                           Bomalaski, John S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        melittin peptide
                                                 PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hoppe-Seyler's Zeitschrift
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 201-994-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 66.0%;
                                                                                                                                                                                                                                                                        HUMAN PHOSPHOLIPASE ACTIVATING PROTEIN AND METHODS FOR DIAGNOSIS OF RHEUMATOID ARTHRITIS
                 US/07/626,589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 93; DB 1;
Pred. No. 6.1e-10;
0; Mismatches (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421250-139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

1

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 8
US-08-079-445-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-07-626-589-3
US-08-079-445-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Patent No.
                                                                                                                                                                                                                                                                                                                       TELEFAX: (619) 555-054
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (215) 568-34 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIA RELEASE #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 26 amino acids
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: P-
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 26 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION: NAME: Campbell, Cathryn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION: TELEPHONE: (215) 568-3100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                             NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: MORELECOMMUNICATION INFORMATION INFORMATI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: FILING DATE: 18-JUI CLASSIFICATION: 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Campbell, Cathryn REGISTRATION NUMBER: 31,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
es 26; Conserv
                                                                                                                                                                                                    OPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GIGAVLK----VLTTGLPALISWIK----RK----RQQ 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   San Diego
                                                                                                                                                                                                                                        amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Application US/08079445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4370 La Jolla Village Drive, Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pinilla, Clemencia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Houghten,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eichler, Jutta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Blondelle, Sylvie E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                             Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAMPBELL AND FLORES
                                                                                                                                                                                                                                                                                                                                                                                                                 (619)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-JUN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       single
                                                                                                                                                                                                                                                                                                                                                                         535-8949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      568-3439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , Richard A.
PEPTIDES HAVING ANTI-MICROBIAL,
HEMOLYTIC, ANTI-MELITTIN OR ANTI-ENZYMATIC ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     66.0%;
                            /note= ."C-terminal amino acid
amidated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/08/079,445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              31,815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      w
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     dH-d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MORP-0001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. 6.1e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
```

w ••

```
Query Match
Best Local Similarity
Matches 26; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 9
US-07-943-709-58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                      RESULT 10
US-08-236-410-3
                                                                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-07-943-709-58
                                                                                               Sequence 3, Application US/08236410 Patent No. 5580968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (312) 616-5460
INFORMATION FOR SEQ ID NO: 5
SEQUENCE CHARACTERISTICS:
LENGTH: 26 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Eichler, APPLICANT: Houghten TITLE OF INVENTION: ITTLE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PM PC - DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 29,381
TELECOMMUNICATION INFORMATION:
TELEPHONE: (312) 616-5400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 19-NOV-1991
ATTORNEY/AGENT INFORMATION:
NAME: Gamson, Edward P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 26 amino acids
TYPE: AMINO ACID
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: Chicago
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                                                                                                                                                                                                                                                                GIGAVLK----VLTTGLPALISWIK----RK----RQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3, Application US/07943709
5556762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Illinois
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180 No. 5556762th Stetson, Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HOUGHTEN, RICHARD SYNTHETIC PEPTIDE COMBINATORIAL VERVION: SCANNING SYNTHETIC PEPTIDE COMBINATORIAL VERVION: LIBRARIES: OLICOPEPTIDE MIXTURE SETS HAVING ONE VERVION: PREDETERMINED RESIDUE AT A SINGLE, PREDETERMINED POSITION, METHODS OF MAKING AND USING THE SAME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Appel Jr., Jon R. Blondelle, Silvie
                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eichler, Jutta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dooley, Colette T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pinilla, Clemecia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Milnamow,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dressler,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JMBER: US 07/797,551
19-NOV-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Edward P
                                                                                                                                                                                                                                                                                                                                                                                                        68.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              66.0%;
68.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US/07/943,709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Goldsmith, Shore, Sutker &
                                                                                                                                                                                                                                                                                                                                                                           ; Score 93; DB;
; Pred. No. 6.1e:
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 93; DB 1;
Pred. No. 6.1e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                           6.1e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                                                                                                                                   26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 26;
                                                                                                                                                                                                                                                                                                                                                                                                                               Length 26;
                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12;
                                                                                                                                                                                                                                                                                                                                                                              12;
                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
                                                                                                                                                                                                                                                                                                                                                                           ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 11
US-08-218-608-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-236-410-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 8, Application US/08218608 Patent No. 5607859 GENERAL INFORMATION:
ZIP: 02210
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: BM PC COMPUTER:
OPERATING SYSTEM: PC-DOS/MS-DOS
**OFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: METHODS AND PRODUCTS FOR MASS
TITLE OF INVENTION: SPECTROMETRIC MOLECULAR WEIGHT DETERMINATION OF POLYIONIC
TITLE OF INVENTION: ANALYTES EMPLOYING POLYIONIC REAGENTS
NUMBER OF SEQUENCES: 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                       COUNTRY: US
ZIP: 02210
                                                                                                                                                                                                                                                                                       STREET: 600 A
                                                                                                                                                                                                                                                                   STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                    ADDRESSEE: WOLF, GREENFIELD & SACKS, P.C. STREET: 600 ATLANTIC AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH:
                                                                                                                                                                                                                                                             ΜA
                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BIEMANN,
```

JUHASZ, PETER

KLAUS

```
Query Match 66.0%;
Best Local Similarity 68.4%;
Matches 26; Conservative
                                                                                                                                                                                                                                                                           TELEFAX: 215-568-3439 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: WordPerfect 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: U5/08/2
FILING DATE: 02-MAY-1994
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 04-NOV-1993
ATTORNEY/AGENT INFORMATION:
NAME: Dianne B. Elderkin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
ADDRESSEE: Woodcock Washburn Kurtz Mackiewicz and STREET: One Liberty Place - 46th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Short, Robert
TITLE OF INVENTION: HUMAN PHOSPHOLIPASE ACTIVATING PROTEIN AND
TITLE OF INVENTION: FOR DIAGNOSIS OF RHEUMATOID ARTHRITIS
                                                                                                                                                                                                                                                                                                               TELEPHONE: 215-568-3100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch disk, 720 Kb
                                                                                                                                                                 MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                               TELEPHONE: Z13 U. TELEPHONE: Z13-568-3439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: One Libert:
CITY: Philadelphia
                                                                                                                                                                                                                                                                                                                                                   REGISTRATION NUMBER: 28 REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 08/147,925 FILING DATE: 04-NOV-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS
STRANDEDNESS:
                      1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19103
                                                                                                                                                                                                                        amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PA
                                                                                                                                                                                                                                         26 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Clark, Mike A. Shorr, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bomalaski, John
                                                                                                                                                                                      linear
                                                                                                                                                                                                     single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US/08/236,410
                                                                                                                                                                                                                                                                                                                                                              28,598
                                                                                                                                                                                                                                                                               ω
••
                                                                                                                                                                                                                                                                                                                                                       MORP-0028
                                                                         0.
                                                                                           Score 93; DB 1;
Pred. No. 6.1e-10;
                                                                         Mismatches
                                                                                                            Length 26
                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         No. 5580968ris
                                                                         12;
                                                                         Gaps
                                                                         Ψ
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-218-608-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity Matches 26; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NFORMATION FOR SEQ ID NO:
                                                                                                                                                                                            SOFTWARE: DW4.V2
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 26 amino acids
                            ATTORNEY/AGENT INFORMATION:
                                                                                                                                  PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HYPOTHETICAL:
ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
 NAME: Olstein, Elliot M. REGISTRATION NUMBER: 24,
                                                         APPLICATION NUMBER:
                                                                            FILING DATE:
                                                                                       APPLICATION NUMBER:
                                                                                                        FILING DATE:
                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                           OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Apis mellifera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: GATES, EDWARD REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OPOLOGY:
                                                                                                                                                                                                                                                                                                                                                              DDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                          LE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GIGAVLK----VLTTGLPALISWIK----RK----RQQ 26
                                                                                                                                                                                                                                                                                                                 Roseland
: New Jersey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            amino acid
                                                                                                                                                                                                                                                                                                                                             6 Becker Farm Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/08434120
                                                                                                                                                                                                                                                                                                     USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        617-720-2441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Baker,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                           IBM PS/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                              Cecchi
                                                                                                                                                                                                                                                                                                                                                                           Carella, Byrne, Bain, Gilfillan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EDWARD R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-MAR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Margaret A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Leonard S.
                                                                                                                                                                                                                           PC-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                      Malignancies with
Biologically Active Peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Treatment of Gynecological
                                                           US/07/937,462
                                                                                       US/08/226,108
                                                                                                                    US/08/297,950
                                                                                                                                                                                US/08/434,120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US/08/218,608
24,025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31,616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  M0656/7013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 93;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6.1e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12;
```

ī

```
Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-465-325-93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-434-120-114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seque...
Patent No. 500000
Patent No. 500000
Patent No. 500000
Patent No. 500000
Patent No. 5000000
Patent No. 5000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                               CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/1
FILING DATE: 18-JAN-94
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/8
FILING DATE: 01-JUN-92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 201-994-1744
NFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: HBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                               SOFTWARE: Patentin Rel CURRENT APPLICATION DATA:
                                            ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PUBLICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 UMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
                                                                                                                                                                             APPLICATION NUMBER: FILING DATE: 05-JU
                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                             CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
hes 26; Conserv
                                                                                                                                                                                                                                                                                                                    ZIP: 20005-3315
                                                                                                                                                                                                                                                                                                                                                                                STREET:
                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE: Sequenzanalyse des Melittins aus
TITLE: Spaltstucken
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GIGAVLK ---- VLTTGLPALISWIK ---- RK ---- RQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              amino acid
                                                                                                                                                                                                                                                                                                                                                 D.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Application US/08465325
                                                                                                                                                                                                                                                                                                                                                                               1300 I.
                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Habermann, E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plymouth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hoppe-Seyler's Zeitschrift
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Jentsch, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5110 Campus Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Magainin Pharmaceuticals Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Physiol. Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Apis mellifera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               melittin peptide
                                                                                                                                                                                                                                                                                                                                                                                                             Finnegan, Henderson, Farabow, Garrett &
                                                                                                                                                                                                                                                                                                                                                                                                Dunner
                                                                                                                                                                                05-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           peptide
                                                                                                                                                                                                                                                                                                                                                                               Street, N.W. Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-Terminal Substitutions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              66.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Biologically Active Peptides Having
                                                                                                                                                                                                                                Release #1.0,
                                                                                07/891,201
                                                                                                                                  08/184,462
                                                                                                                                                                                                US/08/465,325
05387.0021-03000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 93;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19462
                                                                                                                                                                                                                                Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6.1e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

TELECOMMUNICATION INFORMATION: TELEPHONE: (202) 408-4000

408-4400 ID NO: 93:

TELEPHONE:

```
; OTHER INFORMATION: ; OTHER INFORMATION: US-08-434-761-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
"~*~hes 26; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-465-325-93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-434-761-7
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: (202) 408-44 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 535-9001
TELEFAX: (619) 535-8949
INFORMATION FOR SEQ ID NO: 7:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Eichler, APPLICANT: Houghten, TITLE OF INVENTION: TITLE OF INVENTION:
                                                                                             FEATURE:
NAME/KEY:
LOCATION:
                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 26 amino acids
                                                                                                                                                                                                                                                                            FILING DATE: 18-JUN-1993
ATTORNEY/AGENT INFORMATION:
NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-1
                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 0/
FILING DATE: 18-JUN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: 1: MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 26 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: San Diego
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
CLASSIFICATION: 530
                                                                                                                                                TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET:
                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GIGAVLK----VLTTGLPALISWIK----RK----RQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/08434761
                                                                                                                                                                         26 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4370 La Jolla Village Drive, Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Houghten, Richard A.

NVENTION: PEPTIDES HAVING ANTI-MICROBIAL,

VENTION: HEMOLYTIC, ANTI-MELITTIN OR ANTI-ENZYMATIC ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Blondelle, Sylvie I
Pinilla, Clemencia
Eichler, Jutta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          United States of America
                                                                                                              Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAMPBELL AND FLORES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66.0%;
66.0%;
68.4%;
                                                              /note= "C-terminal amino acid
amidated"
                                                                                                                                                                                                                                                                                                                                                              US 08/079,445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sylvie E.
                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/434,761
                                                                                                                                                                                                                                                                               P-HP 9648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 93; DB 1;
Pred. No. 6.1e-10;
Score 93;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
DB 1;
6.1e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
               Length 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                               is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
••
```

```
; MOLECULE TYPE:
; HYPOTHETICAL: Y
; FRAGMENT TYPE:
US-08-039-557-5
                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
Search completed: May 9, 2003, 16:19:27 Job time : 14.7843 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-039-557-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                         Matches
                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/08/039,557
FILING DATE: 26-MAR-1993
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/831,462
FILING DATE: 05-FEB-1992
PRIOR APPLICATION NUMBER: US 07/449,593
FILING DATE: 12-DEC-1989
PRIOR APPLICATION NUMBER: US 07/449,593
FILING DATE: 12-DEC-1989
PRIOR APPLICATION NUMBER: US 07/336,777
FILING DATE: 12-DEC-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: "1.
STREET: Floor
STREET: Hackensack
CITY: Hackensack
CTATE: New Jersey
                                                                                                                                                                                                                                                                                                                         NECEPTAX: 201-343-1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: Patentin Reli
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: ANTIBACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Jackson Esq., David A. REGISTRATION NUMBER: 26,742
                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                        TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE: David A. Jackson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ
                                                           1 GIGAVLK----VLTTGLPALISWIK----RK----RQQ
                                                                                      1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GIGAVLK----VLTTGLPALISWIK----RK----RQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5, Application US/08039557
5, 5714467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07601
                                                                                                                                                                                                                                                                      : 26 amino acids amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         411 Hackensack Ave,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Merrifield, Robert B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Andrew, David
                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Boman,
                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                : peptide
YES
                                                                                                                                                                                                                                                                                                                                                                                                                                                   12-APR-1989
                                                                                                                                                                                                 N-terminal
                                                                                                                                                                                                                                                           single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hans G.
                                                                                                                                      66.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ANTIBACTERIAL AND ANTIMALARIAL HYBRID
                                                                                                                                                                                                                                                                                                                            <u>ر</u>
                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                      600-1-110
                                                                                                                                        Score 93; Pred: No. 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Continental Plaza, 4th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Esq.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                         Mismatches
                                                                                                                    ,.le-10;
0;
                                                                                                                                                      DB 1;
                                                              26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                      Length 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                         Indels
                                                                                                                         12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12;
                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ψ
                                                                                                                        w
٠٠
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq
                                                                                                                                                                                                                 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                              Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   мау
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      349150 seqs, 92025710 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-851-422A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                 36.22
34.85
36.22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Published_Applications_AA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   : /cgn2_6/ptodata/2/pubpaa/JS07_PUBCOMB.pep:*
: /cgn2_6/ptodata/2/pubpaa/JS07_PUBCOMB.pep:*
: /cgn2_6/ptodata/2/pubpaa/JS08_PUBCOMB.pep:*
: /cgn2_6/ptodata/2/pubpaa/JS09_PUBCOMB.pep:*
: /cgn2_6/ptodata/2/pubpaa/JS09_PUBCOMB.pep:*
: /cgn2_6/ptodata/2/pubpaa/JS09_PUBCOMB.pep:*
: /cgn2_6/ptodata/2/pubpaa/JS10_NEW_PUB.pep:*
2: /cgn2_6/ptodata/2/pubpaa/JS10_NEW_PUB.pep:*
3: /cgn2_6/ptodata/2/pubpaa/JS00_NEW_PUB.pep:*
4: /cgn2_6/ptodata/2/pubpaa/JS00_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9, 2003, 16:15:46; Search time 16.0196 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /cgn2_6/ptodata/2/pubpaa/US06_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                              Length
                                 1222266
                                                                                                                                                                                                                                                                                                                              DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gapext 0.5
9 9
                                                                10
                                                           US-09-999-745-50
US-09-554-000-34
US-09-820-053A-72
US-09-820-053A-72
US-09-87-208-26
US-09-87-208-26
US-09-9752-533-1
US-09-917-340-25
US-09-910-619-120
US-09-909-652-7
US-09-909-652-7
US-09-909-652-7
US-09-909-652-7
US-09-030-619-121
US-09-030-619-124
US-09-030-619-128
US-09-030-619-128
US-09-030-619-128
US-09-030-619-138
                              US-09-820-053A-69
US-09-756-250B-2
                                                                                                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (without alignments)
218.294 Million cell updates/sec
        Sequence 69, Appli
Sequence 2, Appli
Sequence 2, Appli
                                                    Sequence 26, Appli
Sequence 1, Appli
Sequence 120, Appli
Sequence 120, Appli
Sequence 121, Appli
Sequence 121, Appli
Sequence 122, Appli
Sequence 124, Appli
Sequence 128, Appli
Sequence 128, Appli
Sequence 130, Appli
Sequence 130, Appli
                                                                                                                                                                                                                                       Sequence 50, Appl
Sequence 34, Appl
Sequence 72, Appl
Sequence 216, App
                                                                                                                                                                                                                                                                                                                          Description
```

	0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	33 4 4 4 4 4 4 4 4 3 3 3 4 5 5 5 5 5 5 5
	31.9 30.5 30.5 29.8 29.8 29.1 29.1 29.1 29.1 29.1 29.1 29.1 29.1
	26 4 25 5 29 5 29 5 29 5 29 5 29 7 61 7 61 7 61 7 61 7 61 7 61 7 61 7 61
	10 10 10 10 10 10 10 10 10 10 10 10 10 1
ALIGNMENTS	US-09-030-619-125 US-09-798-029-2 US-09-798-029-18 US-09-941-947A-38 US-10-051-902-28 US-10-051-902-28 US-10-051-909-28 US-10-051-909-28 US-10-051-909-28 US-09-943-671-3 US-09-943-671-3 US-09-943-671-3 US-09-9808-880-2 US-09-9815-242-13736 US-09-815-242-13736 US-09-815-150-5 US-10-051-902-26 US-10-051-902-26 US-10-051-902-26 US-09-911-630-2 US-09-991-630-2 US-09-991-630-2 US-09-991-630-2 US-09-991-630-2 US-09-991-630-2 US-09-991-630-2 US-09-991-630-1 US-09-991-630-1
	•
	Sequence 125, App Sequence 2, App1 Sequence 18, App1 Sequence 18, App1 Sequence 19, App1 Sequence 28, App1 Sequence 28, App1 Sequence 4, App1 Sequence 4, App1 Sequence 5, App1 Sequence 7, App1 Sequence 7, App1 Sequence 26, App1 Sequence 27, App1 Sequence 26, App1 Sequence 26, App1 Sequence 27, App1 Sequence 26, App1 Sequence 27, App1 Sequence 27, App1 Sequence 10, App1 Sequence 10, App1 Sequence 11, App1 Sequence 13, App1 Sequence 27, App1 Sequence 27, App1 Sequence 28, App1 Sequence 29, App1 Sequence 20, App1 Sequence 20, App1 Sequence 21, App1 Sequence 22, App1

```
RESULT 2
US-09-554-000-34
US-09-554-000-34
Sequence 34, Application US/09554000
Patent No. US20020165364A1
GENERAL INFORMATION:
APPLICANT: Tslen, Roger Y.
APPLICANT: Miyawaki, Atsushi
TITLE OF INVENTION: PLUORESCENT PROTEIN SENSORS FOR
TITLE OF INVENTION: DETECTION OF ANALYTES
FILE REFERENCE: 07257/042001
FILE REFERENCE: 07257/042001
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              : SEQ ID NO 50
LENGTH: 26
: TYPE: PRT
ORGANISM: Apis mellifera
US-09-999-745-50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 1
US-09-999-745-50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
APPLICANT: THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
APPLICANT: Tsien, Roger Y.
APPLICANT: Baird, Geoffrey
TITLE OF INVENTION: CIRCULARLY PERMUTED FLUORESCENT PROTEIN INDICATORS
FILE REFERENCE: REGEN1470-1
CURRENT APPLICATION NUMBER: US/09/999,745
CURRENT FILING DATE: 2001-10-23
PRIOR APPLICATION NUMBER: 09/316,920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 50, Application US/09999745 Patent No. US20020157120A1
                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR FILING DATE: 1999-05-21
NUMBER OF SEQ ID NOS: 67
SOFTWARE: PatentIn version 3.0
CURRENT APPLICATION NUMBER: US/09/554,000
                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
es 26; Conserv
                                                                                                                                                                                                                                                                                                                         1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                                                                                                                                                                                                                                                                                               1 GIGAVLK----VLTTGLPALISWIK----RK----RQQ
                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                         66.0%;
                                                                                                                                                                                                                                                                                                                                                                                      Score 93; DB 9; Le
Pred. No. 4.9e-09;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                               26
                                                                                                                                                                                                                                                                                                                                                                                                                               Length 26;
                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                         12;
```

```
APPLICANT: Owen, Donald R.
TITLE OF INVENTION: SHORT BIOACTIVE PEPTIDES
FILE REPERENCE: HELX027
CURRENT APPLICATION NUMBER: US/09/820,053A
CURRENT FILING DATE: 2001-03-28
NUMBER OF SEQ ID NOS: 165
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 72
LENGTH: 26
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; NAME/KEY: MOD_RES; LCCATION: (26)
; CTHER INFORMATION: AMIDATION
US-09-820-053A-72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Apis mellifera US-09-554-000-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-820-053A-72
                                                                                                                                                                                                                                                                                                                                                             us-09-030-619-216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQ ID NO 34
LENGTH: 26
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 26; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 72, Applica Publication No. US20 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 66.0%;
Best Local Similarity 68.4%;
Matches 26; Conservative
                                                                                                                                                                                                                                                                                                                         Sequence 216, Application US/09030619B Patent No. US20020035061A1
                                                                                                                     APPLICANT: Fraser, Janet R.
APPLICANT: West, Michael H.P.
APPLICANT: MCNICOL, Patricia J.
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATING
TITLE OF INVENTION: INFECTIONS USING CATIONIC PEPTIDES ALC
TITLE OF INVENTION: WITH ANTIBIOTICS
                                                                                                                                                                                                                                                                                                    SENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT FILING DATE: 2000-04-20
PRIOR APPLICATION NUMBER: 08/818,252
PRIOR FILING DATE: 1997-03-14
NUMBER OF SEQ ID NOS: 56
                                                                        CURRENT APPLICATION NUMBER: US/09/030,619B CURRENT FILING DATE: 1998-02-25
                                     SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: FastSEQ for Windows Version 4.0
                                                   NUMBER OF SEQ ID NOS:
                                                                                                           FILE REFERENCE:
                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: SYNTHETIC SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: ARTIFICIAL SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
NO 216
TH: 26
                                                                                                                                                                                                                                                                                                                                                                                                                                     GIGAVLK----VLTTGLPALISWIK----RK----RQQ 26
                                     FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                               Erile, Douglas
                                                                                                                                                                                                                                                                 Taylor, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/09820053A
o. US20030083243A1
                                                                                                                                                                                                                                                                              Krieger, Timothy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                               660081.406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              66.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 93; DB 9;
Pred. No. 4.9e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 93; DB 9;
Pred. No. 4.9e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                   PEPTIDES ALONE OR IN COMBINATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     w
```

```
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; TYPE: PRT ; ORGANISM: Apis mellifera US-09-030-619-216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; ORGANISM: Apis mellifera(Honeybee)Apis cerana(Ind. honeybee)
US-09-847-208-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 6
US-09-752-533-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-847-208-26
                                                                                           CURRENT APPLICATION NUMBER: US/09/752,533
CURRENT FILING DATE: 2000-12-29
PRIOR APPLICATION NUMBER: 08/769,041
PRIOR FILING DATE: 1996-12-18
PRIOR APPLICATION NUMBER: 08/453,254
PRIOR FILING DATE: 1995-05-30
PRIOR APPLICATION NUMBER: 08/152,506
PRIOR APPLICATION NUMBER: 08/152,506
PRIOR APPLICATION NUMBER: 07/914,869
PRIOR APPLICATION NUMBER: 07/914,869
PRIOR FILING DATE: 1993-07-15
PRIOR FILING DATE: 1993-07-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Zhu, Daocheng
TITLE OF INVENTION: FUSION MOLECULES AND TREATMENT OF
TITLE OF INVENTION: IJE MEDIATED ALLERGIC DISEASES
FILE REFERENCE: UC67.002A
CURRENT FILING DATE: 2001-05-01
RUMBER OF SEQ ID NOS: 177
SOFTWARE: FASTSEQ FOR Windows Version 4.0
SEQ ID NO 26
LENGTH: 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 26; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 26, Application US/09847208 Publication No. US20030082190A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application US
Patent No. US20020107389A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
SOFTWARE:
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Saxon, Andrew APPLICANT: Zhang, Ke APPLICANT: Zhu, Daocheng
                                                                                                                                                                                                                                                                                                   APPLICANT: Livingston, Douglas A.
APPLICANT: Yu, Lin
TITLE OF INVENTION: CONJUGATES OF CHEMICALLY DEFINED
TITLE OF INVENTION: NON-POLYMERIC VALENCY PLATFORM I
TITLE OF INVENTION: ACTIVE MOLECULES
FILE REFERENCE: 252312005704
                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Coutts, Stephen M. APPLICANT: Jones, David S. APPLICANT: Livingston, DouglappLICANT: Yu, Lin
                                                        PRIOR FILING DATE: 1993-09-08
                                         NUMBER OF
                                                                             PRIOR APPLICATION NUMBER: 08/118,055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 7
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         44 GIGAVLK----VLTTGLPALISWIK----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
les 26; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                    FastSEQ
                                         SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Application US/09752533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                    for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         66.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 93; DB 10;
Pred. No. 4.9e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 93; DB 9;
Pred. No. 1.4e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RK - - - - RQQ
                                                                                                                                                                                                                                                                                                                                               PLATFORM MOLECULES AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                               BIOLOGICALLY
```

```
δõ
                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; TYPE: PRT ; ORGANISM: Apis mellifera US-09-917-340-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                       US-09-030-619-120
SOFTWARE: Fa
SEQ ID NO 120
LENGTH: 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn Ver.
SEQ ID NO 25
LENGTH: 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                       Sequence 120, Application US/09030619B Patent No. US20020035061A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 25, Application UPatent No. US20020090369Al
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -09-917-340-25
                                          CURRENT APPLICATION NUMBER: US/09/030,619B
CURRENT FILING DATE: 1998-02-25
NUMBER OF SEQ ID NOS: 232
                                                                                             APPLICANT: Fraser, Janet R.
APPLICANT: West, Michael H.P.
APPLICANT: MCNICOL, Patricia J.
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATING
TITLE OF INVENTION: INFECTIONS USING CATIONIC PEPTIDES ALC
TITLE OF INVENTION: WITH ANTIBIOTICS
FILE REFERENCE: 660081.406
                                                                                                                                                                                                                    APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR FILING DATE: 2001-05-15
NUMBER OF SEQ ID NOS: 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: 60/221,632
PRIOR FILING DATE: 2000-07-28
PRIOR APPLICATION NUMBER: 60/249,602
PRIOR APPLICATION NUMBER: 60/249,602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT FILING DATE: 2001-07-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Transplant Media FILE REFERENCE: TPLANT-06468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Murphy, Christopher APPLICANT: McAnulty, Jonathan
                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: 60/290,932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: Gln attached to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Apis cerana FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                          1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GIGAVLK----VLTTGLPALISWIK 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GIGAVLKXXXXVLTTGLPALISWIK 25
                                                                                                                                                                                                                                                                                                                                                                                          1 GIGAVLK----VLTTGLPALISWI----SRK---KRQQ 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          McAnulty, Jonathan F.
Reid, Ted W.
VENTICE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AMIDATION
                                 FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                  Krieger, Timothy J.
Taylor, Robert
Erfle, Douglas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/09917340
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000-11-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                65.2%;
84.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 87.5; DB 10
Pred. No. 4.3e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 92; DB 10;
Pred. No. 7.2e-09;
0; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Amide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 10;
                                                                                                                                  PEPTIDES ALONE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            11:
                                                                                                                                  OR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4
                                                                                                                                  IN COMBINATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                            u.
```

```
Query Match
Best Local Similarity
"~+~hes 16; Conserv?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OTHER INFORMATION: Cationic Peptide Analogue US-09-030-619-120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , OTHER INFORMATION: CEMA analogue of cecropin-melittin hybrid US-09-909-652-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                        APPLICANT: Taylor, Robert
APPLICANT: Erfle, Douglas
APPLICANT: Erfle, Douglas
APPLICANT: Fraser, Janet R.
APPLICANT: West, Michael H.P.
APPLICANT: West, Michael H.P.
APPLICANT: West, Michael H.P.
APPLICANT: WONICOL, Patricia J.
TITLE OF INVENTION: COMPOSITIONS AND METHODS
TITLE OF INVENTION: INFECTIONS USING CATIONI
TITLE OF INVENTION: WITH ANTIBIOTICS
FILE REFERENCE: 660081.406
CURRENT APPLICATION NUMBER: US/09/030,619B
CURRENT FILING DATE: 1998-02-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-909-652-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                   us-09-030-619-121
                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 10
                 SEQ ID NO 121
LENGTH: 28
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 81.8
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 7
LENGTH: 28
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 7, Application US Patent No. US20020025537A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                             Patent No.
                                                                                                                                                                                                                                                                                                                                                                                 Sequence 121,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Coleman, William J.

APPLICANT: Youvan, Douglas C.

TITLE OF INVENTION: HIGH-THROUGHDUT METHODS FOR GENERATING TITLE OF INVENTION: AND SCREENING COMPOUNDS THAT AFFECT CIFILE REFERENCE: 22346-7001

CURRENT APPLICATION NUMBER: US/09/909,652

CURRENT FILING DATE: 2001-10-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: US 60/219,179
PRIOR FILING DATE: 2000-07-19
NUMBER OF SEQ ID NOS: 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Kairos Scientific, Inc
                                                                         NUMBER OF SEQ ID NOS:
SOFTWARE: FastSEQ for
                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Artificial Sequence
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9 GIGAVLK----VLTTGLPALIS 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GIGAVLKXXXXVLTTGLPALIS 22
                                                                                                                                                                                                                                                                                                                                                               US20020035061A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Application US/09909652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bylina, Edward J.
                                                                                                                                                                                                                                                                                                                    Krieger, Timothy J.
                                                                                                                                                                                                                                                                                                                                                                                 Application US/09030619B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       45.4%;
                                                                         Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 64; DB Pred. No. 0.00 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 72;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                         CATIONIC PEPTIDES ALONE OR IN COMBINATION
                                                                                                                                                                                                         METHODS FOR TREATING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 10;
1.7e-05;
hes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         00042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 THAT AFFECT CELL VIABILITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
```

FEATURE:

```
ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   뭉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; OTHER INFORMATION: Cationic Peptide Analogue US-09-030-619-121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-756-250B-3
                                                                                                                                                                                                                                                                                                                                                                                                       JS-09-030-619-122
                                                                                                                   SOFTWARE: FE
SEQ ID NO 122
LENGTH: 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PatentIn version 3.0 SEQ ID NO 3 LENGTH: 15
Query Match
Best Local Similarity
                                            FEATURE:
OTHER INFORMATION: Cationic Peptide Analogue
-09-030-619-122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 3, Application US/09756250B Patent No. US20020058020A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: NO. US20020058020Alartis AG
TITLE OF INVENTION: Isolated amphiphilic peptides derived from the cytoplasmic tail
TITLE OF INVENTION: envelope proteins
FILE REFERENCE: 4-30663a/CI/GTI 2042
CURRENT APPLICATION NUMBER: US/09/756,250B
CURRENT FILING DATE: 2001-12-13
NUMBER OF SEQ ID NOS: 8
                                                                                                                                                                                                                                                                                                                                                                           Patent No. US20020035061A1
                                                                                                                                                               NUMBER OF SEQ ID NOS:
                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/09/030,619B CURRENT FILING DATE: 1998-02-25
                                                                                                                                                                                                                   APPLICANT: MCNIGOL, PATRICIA J.
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATING
TITLE OF INVENTION: INFECTIONS USING CATIONIC PEPTIDES AL
TITLE OF INVENTION: WITH ANTIBIOTICS
                                                                                                                                                                                                             FILE REFERENCE:
                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                   ORGANISM: Artificial Sequence
                                                                                                       TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: MUTAGEN
LOCATION: (1)..(15)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: Shortened analogue of melittin peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION:
                                                                                                                                                  FastSEQ
                                                                                                                                                                                                                                                                                                                Taylor, Robert
Erfle, Douglas
                                                                                                                                                                                                                                                                                                 Fraser,
                                                                                                                                                                                                                                                                                                                                 Taylor, Robert
                                                                                                                                                                                                                                                                                   West, Michael H.P.
                                                                                                                                                                                                                                                                                                                                                                                          Application US/09030619B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                             660081.406
                                                                                                                                                 for Windows Version 3.
                                                                                                                                                                                                                                                                                                    Janet R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        45.48;
36.2%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            44.78;
92.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 64;
Pred. No.
Score 51;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 63; [
Pred, No. 0
DB 10;
0.06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 10;
0.00042;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .00031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 28
             Length 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                         ALONE OR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0:
                                                                                                                                                                                                                                         IN COMBINATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-030-619-128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-030-619-124
                                                                                                                   SOFTWARE: FA
SEQ ID NO 128
LENGTH: 26
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILE REFERENCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11;
```

```
CURRENT APPLICATION NUMBER: US/09/030,619B
CURRENT FILING DATE: 1998-02-25
NUMBER OF SEQ ID NOS: 232
SOFTWARE: FASTSEQ for Windows Version 3.0
SEQ ID NO 124
LENGTH: 26
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; OTHER INFORMATION: Cationic Peptide Analogue US-09-030-619-124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 36.3
Best Local Similarity 100
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 128, Application US/09030619B Patent No. US20020035061A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 124, Application US/09030619B Patent No. US20020035061A1
                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/09/030,619B
CURRENT FILING DATE: 1998-02-25
NUMBER OF SEQ ID NOS: 232
                                                                                                                                                                                                                                                             APPLICANT: MCNICOL, PATRICIA J.
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TREATING
TITLE OF INVENTION: INFECTIONS USING CATIONIC PEPTIDES ALONE OR IN COMBINATION
TITLE OF INVENTION: WITH ANTIBLOTICS
FILE REFERENCE: 660081.406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: MCNICOL, PATTICIA J.
TITLE OF INVENTION: COMPOSITIONS AND
TITLE OF INVENTION: INFECTIONS USING
TITLE OF INVENTION: WITH ANTIBIOTICS
NAME/KEY: VARIANT
LOCATION: (4)...(4)
OTHER INFORMATION: Xaa
NAME/KEY: VARIANT
                                                                             FEATURE: OTHER INFORMATION: Fusion Peptides
                                                                                                                ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16 VLTTGLPALIS 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12 VLTTGLPALIS 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VLTTGLPALIS 26
                                                                                                                                                                                           FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                              West, Michael H.P
                                                                                                                                                                                                                                                                                                                                                                             Fraser, Janet R
                                                                                                                                                                                                                                                                                                                                                                                              Erfle, Douglas
                                                                                                                                                                                                                                                                                                                                                                                                                  Taylor, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                 Krieger,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Fraser, Janet R. West, Michael H.P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Erfle, Douglas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Krieger,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                660081.406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                     Timothy J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Timothy J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    36.2%;
                       Hydrophilic Residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 51;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATIONIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 10;
0.06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ALONE OR IN COMBINATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
LOCATION: (10)...(11)
OTHER INFORMATION: Xaa - Hydrophilic Residue
NAME/KEY: VARIANT
LOCATION: (12):..(13)
OTHER INFORMATION: Xaa - Hydrophobic Residue
NAME/KEY: VARIANT
LOCATION: (14)...(15)
OTHER INFORMATION: Xaa - Hydrophilic Residue
US-09-030-619-128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        : NUMBER OF SEQ ID NOS: 232
: SOFTWARE: FastSEQ for Windows V
: SEQ ID NO 130
: LENGTH: 26
: TYPE: PRT
: ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-030-619-130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 130, Application US/09030619B Patent No. US20020035061A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                        NAME/KEY: VARIANT
LOCATION: (5)...(6)
OTHER INFORMATION: Xaa = H)
NAME/KEY: VARIANT
LOCATION: (7)...(8)
OTHER INFORMATION: Xaa = H)
NAME/KEY: VARIANT
LOCATION: (9)...(1)
OTHER INFORMATION: Xaa = H)
NAME/KEY: VARIANT
LOCATION: (10)...(11)
OTHER INFORMATION: Xaa = H)
NAME/KEY: VARIANT
LOCATION: (12)...(13)
OTHER INFORMATION: Xaa = H)
NAME/KEY: VARIANT
LOCATION: (12)...(13)
OTHER INFORMATION: Xaa = H)
NAME/KEY: VARIANT
LOCATION: (12)...(13)
OTHER INFORMATION: Xaa = H)
NAME/KEY: VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: MCNICOL, PATTICIA J.
TITLE OF INVENTION: COMPOSITIONS AND
TITLE OF INVENTION: INFECTIONS USING
TITLE OF INVENTION: WITH ANTIBIOTICS
FILE REFERENCE: 660081 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/030,619B CURRENT FILING DATE: 1998-02-25
                                                                                                                                                                                                                                                                                                                                                                                                    THEATURE:
OTHER INFORMATION: Fusion Peptides
NAME/KEY: VARIANT
LOCATION: (4)...(4)
OTHER INFORMATION: Xaa - Hydrophilic Residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCATION: (9)...(9)
OTHER INFORMATION: Xaa -
NAME/KEY: VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCATION: (7)...(8)
OTHER INFORMATION: Xaa -
OTHER INFORMATION: Xaa -
OTHER INFORMATION: Xaa = Hydrophilic Residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: Xaa = Hydrophobic Residue
NAME/KEY: VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12 VLTTGLPALIS 22
||||||||||
16 VLTTGLPALIS 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Match 36.2%; Score 51; DB 10; Local Similarity 100.0%; Pred. No. 0.06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fraser, Janet R. West, Michael H.P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Krieger, Timothy J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hydrophilic Residue
                                                                                                                                                                                                                                                                         Hydrophilic Residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hydrophobic Residue
                                                                    Hydrophobic Residue
                                                                                                                                  Hydrophilic Residue
                                                                                                                                                                                                         Hydrophobic Residue
                                                                                                                                                                                                                                                                                                                                           Hydrophobic Residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           METHODS FOR TREATING CATIONIC PEPTIDES ALONE OR IN COMBINATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
```

```
δÃ
                                                                                    US-09-030-619-130
                            Query Match
Best Local Similarity
Matches 10; Conserv
  12 VLTTGLPALIS 22
                              Conservative
                                         35.5%;
                            Score 50; DB 10; Length 26; Pred. No. 0.089; Indels 1; Mismatches 0; Indels
                              0
                            Gaps
```

0

Search completed: May 9, Job time: 17.0196 secs 2003, 16:20:17

В

16 ILTTGLPALIS 26

Gaps

0,

THIS PAGE BLANK (URPTO)

ť

GenCore version 5.1.4_p5_4578

Copyright (c) 1993 - 2003 Compugen Ltd.

OM protein - protein search, using sw model

Run on: May 9, 2003, 16:12:15; Search time 23.8431 Seconds (without alignments)

Title: US-09-851-422A-2

Perfect score: 141
Sequence: 141
Sequence: 1 GIGAVLKXXXVLTTGLPALISWIKXXXXRQQ 38

Scoring table: BLOSUM62
Gapop 10.0, Gapext 0.5

Searched: 283224 seqs, 96134422 residues

Total number of hits satisfying chosen parameters: 283224

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

PIR_73:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12.	11	10	9	80	7	σ	υ	4	ω	2	Н	No.	Result
42.5	43	43	43	43	43	43	43	43	43.5	44	44	44	44	44	44	45.	45	45	45	45	45	45	46	82		87.5	93	93	Score	
30.1	•	•	•	30.5				•			•	٠	•		•	•	•			۲.		۲.		8	61.7	.2	66.0	6.	Match	Query
330	744	462	462	462	303	283	174	174	200	4344	762	749	714	365	357	365	357	357	357	357	357	197	642	26	26	27	70	26	Length	
Ν	N	N	2	N	Ν	Ŋ	N	N	N	_	N	N	N	N	N	N	N	N	Ŋ	N	Ŋ	N	N	Ц	₽	_	<u></u>		BB	
C87036	AG1382	E65131	в86002	E91156	F86158	T44904	C97951	G95083	G75550	A53489	н87466	A75560	T25056	I56053	S11133	172218	w	S11140	S11135	S11134	S11137	AI0115	I46534	MEHBCF	MEHBCD	MEHB2	MPHB1	MEHBCI	ID	
	transport protein	hypothetical 47.5	probable amino aci	probable amino aci	to.		hypothetical prote		conserved hypothet	dynein heavy chain	beta-D-glucosidase	conserved hypothet	hypothetical prote	H	s H	υ Η	S H	5	S	S	I hi	н	dium		.ittin -	, minor -	, mai	3	Description	

ALIGNMENTS

MPHB1 MP	RESULT 1 MEHBCI mellittin, major - Indian honeybee C;Species: Apis mellifera cerana (Indian honeybee) C;Date: 13-Jul-1981 #sequence_revision 13-Jul-1981 #text_change 15-Oct-1996 C;Accession: A01762 R;Kreil, G. R;Kreil, G. R;Hitle: Structure of melittin isolated from two species of honey bees. A;Reference number: A91392 A;Accession: A01762 A;Molecule type: protein A;Residues: 1-26 <kre> A;Note: the Indian bee Sequence is identical with that of honeybee (Apis mellifera) C;Superfamily: melittin major C;Superfamily: militin major C;Superfamily: mellifera) A;Note: the Indian bee Sequence is identical with that of honeybee (Apis mellifera) C;Superfamily: mellifera) A;Note: the Indian bee Sequence is identical with that of honeybee (Apis mellifera) A;Note: the Indian bee Sequence is identical with that of honeybee (Apis mellifera) A;Note: the Indian bee Sequence is identical with that of honeybee (Apis mellifera) A;Note: the Indian bee Sequence A;Note: the Indian bee Seque</kre>
--	--

```
melittin, minor - honeybee
C:Speckes: Apis mellifera (honeybee)
C:Date: 13-3u1-1981 #sequence_revision
C:Accession: A01764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R:Terwilliger, T.C.; Eisenberg, D.
J. Blol. Chem. 257, 6016-6022, 1982
A:Title: The structure of melittin. II. Interpretation of the striction of the structure of melittin. II. Interpretation of the striction and the structure of melittin. II. Interpretation: 7076662
A:Reference number: A30640; MUID:82189959; PMID:7076662
A:Contents: annotation; X-ray crystallography, 2.0 angstroms
C:Superfamily: melittin major
C:Keywords: amidated carboxyl end; blocked amino end; hemolysis;
F:1-21/Domain: signal sequence #status experimental <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A:Note: N-formyl-melittin major was isolated from the venom and its structure was confir R;Mollay, C.; Vilas, U.; Kreil, G.
Proc. Natl. Acad. Sci. U.S.A. 79, 2260-2263, 1982
A;Title: Cleavage of honeybee prepromelittin by an endoprotease from rat liver microsome A;Reference number: A18880; MUID:82247982; PMID:7048315
A;Contents: annotation; Intact signal sequence after cleavage by partially purified sign R;Elsenberg, D; Gribskov, M; Terwilliger, T.C.
submitted to the Brookhaven Protein Data Bank, October 1990
A;Reference number: A50496; PDB:2MLT
A;Reference number: A50496; PDB:2MLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R:Terwilliger, T.C.; Eisenberg, D.
J. Biol. Chem. 257, 6010-6015, 1982
A:Title: The structure of melittin. I. Structure determination A:Reference number: A30639; MUID:82189958; PMID:7076661
A:Contents: annotation; X-ray crystallography, 2.0 angstroms
                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Ramalingam, K.; Bello, J.
Biochem. J. 284, 663-665, 1992
A;Title: Effect of permethylation on the haemolytic activity
A;Reference number: S23131; MUID:92321983; PMID:1622387
                                                                                                                   MEHB2
                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Title: Isolation and structure of N(alpha)-formyl melittin A;Reference number: A91267; MUID:72098669; PMID:5139483 A;Contents: annotation; synthesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Note: about 10% of melittin is formylated at the amino R;Luebke, K.; Matthes, S.; Kloss, G. Experientia 27, 765-767, 1971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Blochem. Blophys. Res. Commun. 27, 275-280, 1967
A;Title: The isolation of N-formylglycine from a polypeptide present
A;Reference number: A90165; MUID:67248282; PMID:6040373
A;Contents: annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Note: the structure of melittin was confirmed by R; Kreil, G.; Kreil-Kiss, G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Title: Haemolytic activity and action on the surface A; Reference number: A91266; MUID:72098668; PMID:5139482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Schroeder, E.; Luebke, Experientia 27, 764-765,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: p
A; Residues: 44-69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Reference number: A; Accession: S23131
                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;22-43/Domain: propeptide #status experimental <PRO>;44-69/product: melittin major #status experimental <MAJ>;51-69/product: melittin F #status experimental <MELF>;44/Modified site: formylated amino end (Gly) (in mature;69/Modified site: amidated carboxyl end (Gln) (amide in |
                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contents: annotation; X-ray crystallography, 2.0 angstroms,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Residues: 51-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Accession: B61285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contents: annotation; synthesis
                                                                                                                                                                                                                                 44
                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                           1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51-69 <GAU>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein
                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <RAM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                         formylated amino end (Gly) (in mature form) (partial) *status expandated carboxyl end (Gln) (amide in mature form from following
                                                                                                                                                                                                                                 -VLTTGLPALISWIK----RK---
                                                                                                                                                                                                                                                                                                                                                                            66.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MUID:78126868; PMID:631126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lehmann, M.; Beetz,
                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                            Score 93;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                 Mismatches
                          13-Jul-1981 #text_change
                                                                                                                                                                                                                                                                                                                                                                            2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
                                                                                                                                                                                                                                 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             synthesis
                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                    Length 70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tension
                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of aqueous solutions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and
                             15-Oct-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 melittin
                                                                                                                                                                                                                                                                                                                                              12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  homotetramer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           partial refinement.
                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 44-69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  venom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                full hem
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       exper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            91
```

Ĵ

```
FEBS Lett. 54, 100-102, 1975
A.Title: The structure of ApIs dorsata melittin: phylogenetic relations, 1111e: The structure of ApIs dorsata melittin: phylogenetic relations, 201763; MUID:75168194; PMID:1093875
A. Accession: A01763
A. Molecule type: protein
A. Residues: 1-26 < KRE>
C. Superfamily: melittin major
C. Keywords: amidated carboxyl end; homotetramer
F:26/Modified site: amidated carboxyl end (Glu) #status experimental
                                                                           A; Molecule type: protein
A; Residues: 1-26 < KRE>
C; Superfamily: melittin major
C; Keywords: amidated carboxyl end; hemolysis; homotetramer; venom
F; 26/Modified site: amidated carboxyl end (Gln) #status experimen
                                                                                                                                                                                                                                                                  melittin - little honeybee
C;Species: Apis mellifera
C;Date: 22-Jun-1981 *seque
C;Accession: A01765
R;Kreil, G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            melittin - giant honeybee (tentative sequence)
C;Species: Apis mellifera dorsata (giant honeybee)
C;Date: 22-Jun-1981 #sequence_revision 22-Jun-1981
C;Accession: A01763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R:Habermann, E.; Jentsch, J.
Hoppe-Seyler's Z. Physiol. Chem. 348, 37-50, 1967
A:Title: Sequenzanalyse des Melittins aus den tryptischen v
A:Reference number: A91640; MUID:68327913; PMID:5592400
A:Accession: A01764
A:Molecule type: protein
A:Molecule type: protein
A:Molecule type: protein
A:Residues: 1-27 < C4HB>
A:Residues: 1-27 < C4HB>
A:Schroeder, E.; Luebke, K.; Lehmann, M.; Beetz, I.
Experientia 27, 764-765, 1971
                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A:Note: the structure was confirmed by synthesis of a peptide witing: melittin major C:Reywords: amidated carboxyl end; hemolysis; homotetramer; venom E:27/Modified site: amidated carboxyl end (Gln) #status experiment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Title: Haemolytic activity and action on the surface tension of A;Reference number: A91266; MUID:72098668; PMID:5139482 A;Contents: annotation; synthesis
                                                                                                                                                                                    A; Reference number: A91392
A; Accession: A01765
                                                                                                                                                                                                                             FEBS Lett. 33, 241-244, 1973
A; Title: Structure of melittin
                                                                                                                                                                                                                                                                                                                                                                         MEHBCF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R; Kreil, G.
                                                                                                                                                                                                                                                                                                                                                                                              RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEHBCD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity 76.0 nes 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity 65.8 es 25; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ⊷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           GIGAILK ---- VLSTGLPALISWIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GIGAVLKXXXXVLTTGLPALISWIK 25
  18;
  Conservative
                                                                                                                                                                                                                                                                                                             #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -VLTTGLPALISWI----SRK---KRQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62.1%;
                                                                                                                                                                                                                                                                                                             florea (little honeybee)
ence_revision 22-Jun-1981
                 58.2%;
72.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61.7%;
76.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           confirmed by synthesis of a peptide with full hemolytic act
                                                                                                                                                                                                                             isolated
_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                 Score 82; DB 1;
Pred. No. 4.8e-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 87.5;
Pred. No. 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                             21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               87;
                                                                                                                                                                                                                               from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Gln) #status experimental
                                                                                                                                                                                                                             two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .1e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .1e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        38
                                                                                                                                                                                                                             species
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27
                                                                                                                                                                                                                                                                                                               #text_change 15-Oct-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #text_change
                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
Indels
                                                                               experimental
                                                                                                                                                                                                                             of honey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pund
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        relationships
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     peptischen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11;
4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         aqueous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Spaltstuecke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         solutions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ψ
۲.
```

ţ

Mon

Мау

12

15:29:51 2003

```
RESULT 8
S11137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R:Verri, T.; Markovich, D.; Perego, C.; Norbis, F.; Stange, G.; Sorribas, V.; Am. J. Physiol. 268, F626-F633, 1995

A:Title: Clooing of a rabbit renal Na-pi cotransporter, which is regulated by A;Reference number: I46534; MUID:95251013; PMID:7733319

A:Accession: I46534
                                    class I histocompatibility antigen alpha chain - cotton-top tamarin C;Species: Saguinus oedipus (cotton-top tamarin) C;Date: 25-Feb-1994 *sequence_revision 26-May-1995 *text_change 23-May-1997 C;Accession: S1137 R;Watkins, D.I.; Chen, Z.W.; Hughes, A.L.; Evans, M.G.; Tedder, T.F.; Letvinature 346, 60-63, 1990 **Nature 346, 60-63, 1990 **A;Reference number: S10934; MUID:90309971; PMID:2114550 A;Accession: S1137
                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            conserved hypothetical protein YPO0945 [imported] - Yersinia pestis (strain CO92) C;Species: Yersinia pestis C;Date: 02-Nov-2001 #sequence_revision 02-Nov-2001 #text_change 09-Nov-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             renal sodium-dependent phosphate transporter type II - rabbit C:Species: Oryctolagus cuniculus (domestic rabbit) C:Date: 14-Feb-1997 *sequence_revision 14-Feb-1997 *text chance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
A;Status: preliminary; A;Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Gene: YPO094:
C; Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-197 < KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Reference number: AB0001; A; Accession: AI0115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Title: Genome sequence of Yersinia pestis, the causative agent of plague A; Reference number: AB0001; MUID:21470413; PMID:11586360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R:Parkhill, J.; Wren, B.W.; Thomson, N.R.; Titball, R.W.; Holden, M.T.G.; Prentice, M.B. deno-Tarraga, A.M.; Chillingworth, T.; Cronin, A.; Davies, R.M.; Davis, P.; Dougan, G.; il, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, K.; Whitehead, S.; Barrell, Nature 413, 523-527, 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Cross-references: GB: AL590842;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C: Accession: AI0115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AI0115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: EMBL:U20793; NID:g687736; PIDN:AAA77682.1; PID:g687737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Residues: 1-642 <VER>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Status: preliminary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  382
                                                                                                                                                                                                                                                                                                                  50 AILKARHAAQTTGLPAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                           4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YP00945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GIGAILK---
                                                                                                                                                                                                                                                                                                                                                         AVLKXXXXVLTTGLPAL 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GQVAKVIQKVINTDLPAPFTWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAVLKXXXXVLTTGLPALISWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GIGAVLKXXXXVLTTGLPALISWIK
                                                                                                                                                                                                                                                                                                                                                                                                Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Methanococcus jannaschii conserved
                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #sequence_revision 14-Feb-1997 #text_change
                     nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                    31.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    32.6%;
                                                                                                                                                                                                                                                                                                                  66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PIDN:CAC89788.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24
                                                                                                                                                                                                                                                                                                                                                                                                2
                                                                                                                                                                                                                                                                                                                                                                                                                    Score 45;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 46; DB
Pred. No. 14;
                     sequence not shown;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                      ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                    5.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2; Length 642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PID:g15979015;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10;
                                                                                                                                                                                                                                                                                                                                                                                                6
                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 197;
                                                                                                                                                                                                                                                                                                                                                                                                Indels
                     not
                     compared with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein MJ0226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05-Nov-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GSPDB:GN00175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          regulated by dietary ph
                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                from ancestral
                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                         Letvin,
                   conceptual tra
                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biber, J.
                                                                                  homol
```

```
SIII40
class | histocompatibility antigen alpha chain - cotton-top tamarin C.species: Saguinus oedipus (cotton-top tamarin)
C.species: Saguinus oedipus (cotton-top tamarin)
C.pate: 25-Feb-1994 #sequence_revision 26-May-1995 #text_change 23-'
C.Accession: SIII40
R:Watkins, D.I.; Chen, Z.W.: Hughes, A.L.: Evans, M.G.: Tedder, T.F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
S11135
                                                                                                                                                                                                                                                                                                                                                                                                 A; Residues: 1-357 <WAT>
C; Superfamily: class I histocompatibility antigen;
F; 212-277/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        class I histocompatibility antigen alpha chain - cotton-top tamarin
C:Species: Saguinus oedipus (cotton-top tamarin)
C:Date: 25-Feb-1994 #sequence_revision 26-May-1995 #text_change 23-May-1997
C:Accession: S11134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Residues: 1-357 <WAT>
C;Superfamily: class I histocompatibility antigen; immunoglobulin F;212-277/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                           Db
                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Title: Evolution of the MHC class I genes of a New World primate from ancestral hom A;Reference number: S10934; MUID:90309971; PMID:2114550 A;Accession: S11135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R; Watkins, D.I.; Chen,
Nature 346, 60-63, 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 class I histocompatibility antigen alpha chain - cotton-top tamarin
C;Species: Saguinus oedipus (cotton-top tamarin)
C;Date: 25-Feb-1994 #sequence_revision 26-May-1995 #text_change 23-May-1997
C;Accession: S11135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C; Superfamily: class I histocompatibility antigen; immunoglobulin homology F; 212-277/Domain: immunoglobulin homology < IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Status: preliminary; nucleic acid sequence not shown; not compared with conceptual A;Molecule type: mRNA A;Residues: 1-357 <WAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Accession: S11134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Reference number: S10934;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nature 346, 60-63, 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R; Watkins, D.I.; Chen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S11134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Status: preliminary; nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                           302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  302 GIVAILAILGAVVTGAVVAAVMWRKKSSDKKGGSYSQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         302 GIVAILAILGAVVTGAVVAAVMWRKKSSDKKGGSYSO 338
                                                                                                                                                       11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity les 11; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                 Local Similarity es 11; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQ
                                                                                                                                                                                                                                                                   1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Evolution of the MHC class I genes of a New World primate from ancestral homence number: S10934; MUID:90309971; PMID:2114550
                                                                                                                                                                                                                         GIVAILAILGAVVTGAVVAAVMWRKKSSDKKGGSYSQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Z.W.; Hughes, A.L.; Evans, M.G.; Tedder, T.F.; Letvin, N.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Z.W.; Hughes, A.L.; Evans, M.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31.9%;.
                                                                                                                                                                                                                                                                                                                                      31.98;
29.78;
                                                                                                                                                                                                                                                                                                                                    Score 45;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 45; 'DB Pred. No. 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 45; DB 2;
Pred. No. 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence not shown;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                 26-May-1995 #text_change 23-May-1997
                                                                                                                                                                                                                                                                                                                                  DB
11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21;
                                                                                                                                                                                                                                                                                                                                                                                                                             immunoglobulin
                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            not compared with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tedder, T.F.; Letvin,
                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           homology
                                                                                                                                                                                                                                                                                                                                                                                                                             homotogy
                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Z . L .
```

Evans, M.G.; Tedder, T.F.; Letvin,

A;Title: Evolution of the MHC class I genes of a New World primate from ancestral A;Reference number: S10934; MUID:90309971; PMID:2114550 A;Accession: S11140

A; Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tr

homo1c

```
RESULT 12
S11139
                                                                                                              A:Status: preliminary; nucleic acid
A:Molecule type: mRNA
A:Residues: 9-365 <WAT>
                                                                                                                                                                               A;Title: Evolution of the MHC class I genes of a New World primate from ancestral homologreference number: S10934; MUID:90309971; PMID:2114550
A;Accession: S11142
                                                                                                                                                                                                                                                                                                                  A;Status: preliminary: translated from GB/EMBL/DDBJA;Molecule type: mRNAA;Residues: 1-365 <RES>
                                                                                                                                                                                                                                                                                                                                                                                    A;Title: Molecular cloning of cDNA that encode MHC class A;Reference number: I56053; MUID:90111120; PMID:2104912 A;Accession: I72218
                                                                                                                                                                                                                                                                                                                                                                                                                                                     C:Accession: 172218; S11142
R:Watkins, D.I.; Letvin, N.L.; Hughes, A.L.; Tedder,
J. Immunol. 144, 1136-1143, 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       class I histocompatibility antigen I-C alpha chain precursor - c N;Alternate names: MHC class IC protein C;Species: Saguinus cedipus (cotton-top tamarin) C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: preliminary; nucleic acid sequence not shown; not compared with conceptual A;Molecule type: mRNA A;Residues: 1-357 <WAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Title: Evolution of the MHC class I genes of a New World primate from ancestral A;Reference number: $10934; MUID:90309971; PMID:2114550 A;Accession: $11139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;Watkins, D.I.; Chen, :
Nature 346, 60-63, 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                class I histocompatibility antigen alpha chain - cotton-top tamarin
C:Species: Saguinus oedipus (cotton-top tamarin)
C:Date: 25-Feb-1994 *sequence_revision 26-May-1995 *text_change 23-May-1997
C:Accession: S11139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Superfamily: class I histocompatibility antigen; immunoglobulin homology F;212-277/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 1-357 <WAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                     R; Watkins, D.I.; Chen, Nature 346, 60-63, 1990
                                                                                                                                                                                                                                                                           A;Cross-references: GB:M33477; NID:g343319; PIDN:AAA36953.1; PID:g343320 R;Watkins, D.I.; Chen, Z.W.; Hughes, A.L.; Evans, M.G.; Tedder, T.F.; Le
                                                                   ;Superfamily: class I histocompatibility antigen; Keywords: glycoprotein; transmembrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Superfamily: class I histocompatibility antigen; immunoglobulin homology;212-277/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              302 GIVAILAILGAVVTGAVVAAVMWRKKSSDKKGGSYSQ 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     302 GIVAILAILGAVVTGAVVAAVMWRKKSSDKKGGSYSQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity 29.1 Local Similarity 29.1 Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                 1mmunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Z.W.; Hughes, A.L.; Evans, M.G.; Tedder, T.F.; Letvin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31.9%;
         . 99
                                              homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 45;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 45; DB
Pred. No. 11;
       Score
                                                                                                                                                        sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
    45
                                                   <IMM>
                                                                                                                                                            not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
       DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 37
    Ņ
                                                                                                                                                               shown;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21;
                                                                                           immunoglobulin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 357;
Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  T.F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                            not
                                                                                                                                                                                                                                                                                                                                                                                                                                     I molecules
       365
                                                                                                                                                          compared with conceptual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cotton-top tamarin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                     from
                                                                                                                                                                                                                                                                             Letvin,
                                                                                                                                                                                                                                                                                                                                                                                                                                     Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                     new
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                             N.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Z. L.
                                                                                                                                                                                                                                                                                                                                                                                                                                     world
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      homole
                                                                                                                                                                 Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ç
```

ð

D

Search co

completed: May ne : 25.8431 se

9

2003,

16:18:46

310

GIVAILAILGVVVTGAVVAAVMWRKKSSDKKGGSYSQ

```
y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Species: Saguinus oedipus (cotton-top tamarin)
C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change
C;Accession: I56053; S10934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R; Watkins, D.I.; Chen, Z.W.; Hughes, A.L.; Evans, M.G.; Tedder, T.F.; Letvin, N.L. Nature 346, 60-63, 1990
A; Title: Evolution of the MHC class I genes of a New World primate from ancestral hom A; Reference number: S10934; MUID:90309971; PMID:2114550
A; Accession: S11133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ő
                                                                                                                                    A; Molecule type: mRNA
A; Residues: 9-365 <MAT>
C; Superfamily: class I histocompatibility antigen;
C; Keywords: glycoprotein; transmembrane protein
F; 220-285/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                 A;Title: Evolution of the MHC class I genes of a New World primate from ancestral hom A;Reference number: S10934; MUID:90309971; PMID:2114550 A;Accession: S10934 A;Status: preliminary; nucleic acid sequence not shown; not compared with conceptual A;Status: preliminary; nucleic acid sequence not shown; not compared with conceptual
                                                                                                                                                                                                                                                                                                                                              R; Watkins, D.I.; C)
Nature 346, 60-63,
                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: GB:M33475; NID:g343315; PIDN:AAA36951.1; PID:g343316 R;Watkins, D.I.; Chen, Z.W.; Hughes, A.L.; Evans, M.G.; Tedder, T.F.; Lei
                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 1-365 < RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Reference number: 156053; MUID:90111120; PMID:210
A;Accession: 156053
A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Title: Molecular cloning of cDNA that encode MHC class A; Reference number: 156053; MUID:90111120; PMID:2104912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Watkins, D.I.; Letvin, N.L.; Hughes, A.L.; Tedder, T.F. J. Immunol. 144, 1136-1143, 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     class I histocompatibility antigen I-A alpha chain N; Alternate names: MHC class IA protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Superfamily: class I histocompa
F;212-277/Domain: immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: mRNA
A; Residues: 1-357 <WAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Status: preliminary; nucleic acid sequence not shown;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C; Accession: S11133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             class I histocompatibility antigen alpha chain - cotton-top tamarin
C;Species: Saguinus oedipus (cotton-top tamarin)
C;Date: 25-Feb-1994 #sequence_revision 26-May-1995 #text_change 23-May-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
Matches 11; Conserv
                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local .
                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              302 GIVAILAILGVVVTGAVVAAVMWRKKSSDKKGGSYSQ 338
                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _
  1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQ 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GIVAILAILGAVVTGAVVAAVMWRKKSSDKKGGSYSQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQ
                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                              1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         I histocompatibility antigen; munoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31.2%;
29.7%;
                                                                       31.2%;
29.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29.7%;
                                                                    Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. 11;
5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                    Mismatches
                                                                       DB 2;
16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37
                                                      21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21;
                                                                                                                                                                                    immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 immunoglobulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 357
                                                                                            Length 365;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   not compared with conceptual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  molecules
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cotton-top
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                      homology
                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                          Letvin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tamarin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       new world
                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                          z
F
```

THIS PAGE BLANK (USPTO)

```
Result
No.
                                                                                                                                                                                                                                                                                                                                    Database
                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB seg length: 0
Maximum DB seg length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run on:
  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                 Score
                                                                                                          protein search, using sw model
                                                                                                                                                                                                                                                                Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                       112892 seqs, 41476328 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                     BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-851-422A-2
141
1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Мау
 SwissProt_40:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9, 2003, 16:08:20 ; Search time 12.2941 Seconds (without alignments) 128.200 Million cell updates/sec
  DB
VGF1_IBVB
YHFC_ECOLI
PTSA_PEDE
NETR_MOUSE
NETR_MOUSE
LUXA_VIBHA
LXA1_PHOLU
LXA2_PHOLU
DHNA_BACSU
DHNA_BACSU
DHNA_BACSU
DHNB_ECOLI
UBIB_SCRPE
UBIB_ECOLI
UBIB_ECOLI
TFXO_RHILT
                                                                                                         HLAH_HUMAN
1B01_SAGOE
CYB_PLACH
OCRB_MYCLE
                                                                                                                                                              SFR1_ARATH
YHFM_ECOLI
DEGP_RHIME
CARB_SYNY3
                                                                                                                                                                                            MLP_RANTE
NPT2_RABIT
1C01_SAGOE
1A01_SAGOE
DYHC_EMENI
                                                                                                                                                                                                                                  MEL_APIME
MEL_APIFL
                                                                                                                                         LUXA_PHOPO LXA1_PHOLE
                                                                                                                                                      NPT2_HUMAN
                                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                  P01501 apis mellif
P01502 apis dorsat
P01504 apis florea
P56924 rana tempor
Q28620 o renal sod
P30517 saguinus oe
P30515 saguinus oe
                                                                                                                                              P45539
Q52894
Q55756
Q06495
P24113
                      P27920
P21229
P43470
O08762
P07740
P19839
P23146
P42974
P26829
Q8zam1
                                                                                                          099256
P15878
                                                                                                                                P09140
P01893
Q916m4
P38225
P42726
                                                                                                                          P30516
                                                                                                                                                                                                                                                                Description
                                                                                                                                                                     4 emericella
5 arabidopsis
9 escherichia
4 rhizobium m
O avian infec
9 escherichia
0 pediococcus
2 mus musculu
0 vibrio harv
9 photorhabdu
4 bacillus sp
1 yersinia pe
4 escherichia
5 saccharomyc
6 rhizobium 1
                                                                                                        6 synechocyst
5 homo sapien
3 photobacter
6 photobacter
7 photobacter
8 homo sapien
6 saguinus oe
6 plasmodium
8 mycobacteri
```

	<u>4</u> И	44	43	42	41	40.	39	38	37	36	35	34
	39	39	39	39	39	39	39	39	39	39	39	39
	27.7	27.7	27.7	27.7	27.7	27.7	27.7	27.7	27.7	27.7	27.7	27.7
	2035	836	549	489	383	362	357	354	313	258	217	209
	_	_	_	Ц	1		1	1	Ц	Ľ	-	_
1	HFC1_HUMAN	VG26_BPML5	QCRB_MYCTU	VGLY_MOPEI	G22C_DROME	10KO_GORGO	LUXA_KRYAS	LUXA_VIBFI	NUDC_MYCTU .	TAM_DEIRA	NU2M_MYTED	BACR_HALHS
					P58952 drosophila							P33972 halobacteri

ALIGNMENTS

R R R R R R	R P R	R R R F	R R R	R R R	7 7 7 F	RRE	R R R	2 R 7	RR	R R	RT	RA	RX C	RP	RL	7 K.T.	RA	R R	RP	R O C	888	200	08	T D I	ᄗ	AC AC	MEL
X-RAY CRYSTALLOGRAPHY. SPECIES-A.mellifera; MEDLINE-82189959; PubMed-7076662; Terwilliger T.C., Eisenberg D.;		SEQUENCE OF 44-69. SPECIES-A.cerana; Kreil G.:	on and structur Lia 27:765-767	MEDLINE-7009869; Pubmed=5139483; Luebke K., Matthes S., Kloss G.;	SYNTHESIS.	perientia 27:764-765(1971).	"Haemolytic activity and action on the surface tension of aqueous solutions of evutheric malitting and their derivatives ".	1105bb K 15bman K 15cot T	SYNTHESIS.	Hoppe-Seyler's Z. Physiol. Chem. 348:37-50(1967).	alysis of melletin from cryp	J.;	<pre>MEDLINE*68327913; PubMed=5592400;</pre>	SEQUENCE OF 44-69 (MELITTIN 1 AND 2).	Eur. J. Biochem. 135:123-126(1983).	"Nucleotide sequence of cloned cDNA coding for noneybee	Unger-Ullmann C., Kreil G., Frischau	SPECIES=A.mellifera; MEDLINE=83287387; PubMed=6309516;	SEQUENCE FROM N.A.	NCBI_TaxID=7460; 7461;	; Neoptera; Endopterygota; Hymenoptera; A	cerana (Indian honeybee). cvota: Metazoa: Arthropoda: Mandibulata	Apis mellifera (Honeybee), and	ation update)	21-JUL-1986 (Rel. 01, Created) 21-JUL-1986 (Rel. 01, Last sequence update)	P01503;	ULT 1 APIME CONNECTED CONNECTED TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TOTAL TO THE TOTAL TOT

```
Query Match
Best Local S
Matches 26
                                                                                                                                                                                                                                                                                                                                                                                                                                 PDB; 2MLT; 15-JUL-92.
PDB; 1HH1; 06-JAN-99.
InterPro: IPR002116; Melittin.
Pfam; PF01372; Melittin; 1.
ProDom: PD014636; Melittin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "The actions of melittin on membranes.";
Blochim. Blophys. Acta 1031:143-161(1990).

-I- FUNCTION: MAIN TOXIN OF BEE VENOM WITH STRONG HEMOLYTIC ACTIVITY.

INTEGRATES INTO CELL MEMBRANES AND HAS MULTIPLE EFFECTS, PROBABLY,
AS A RESULT OF ITS INTERACTION WITH NEGATYYELY CHANGED
PHOSPHOLIPIDS. IT INHIBITS WELL KNOWN TRANSPORT PUMPS SUCH AS THE
NA(+)-K(+)-TPASE AND THE H(+)-K(+)-ATPASE. INCREASES THE
PERMEABILITY OF CELL MEMBRANES TO IONS, PARTICULARLY NA+ AND
INDIRECTLY CA2+, BECAUSE OF THE NA(+)-CA(2+)-EXCHANGE.

-I- SUBGNIT: MOMOMER AND HOMOTETRAMER.
                                                                                                                                                                                                                                                                                   MOD_RES
                                                                                                                                                                                                                                                                                                                       CHAIN
MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "The stru
                                                                                                                                                   SEQUENCE
                                                                                                                                                                                           TURN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL: X02007; CAA26038.1; -. PIR: A01761; MPHB1. PIR: A01764; MEHB2. PIR: A01762; MEHBCI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRUCTURE BY NMR OF 44-69. SPECIES=A.mellifera;
                                                                                                                                                                       HELIX
                                                                                                                                                                                                            HELIX
                                                                                                                                                                                                                                                VARTANT
                                                                                                                                                                                                                                                                                                                                                                                SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <del>;</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dempsey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=90254148; PubMed=2187536;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (JUN-1998) to the PDB data
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Barnham
                                                                                                                                                                                                                                                                                                                                                              PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                  Allergen
                                                                                                                                                                                                                                                                                                                                                                                                                     lemolysis;
44
                                   ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DATABASE: NAME-Protein Spotlight;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MISCELLANEOUS: N-FORMYL-MELITTIN MAJOR HAS 80% OF THE ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NOTE-Issue 12 of July 2001; WWW-"http://www.expasy.org/spotlight/articles/sptlt012.html"
                 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ
GIGAVLK---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SWISS\text{-PROT} entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              structure
.ol. Chem.
                                                                      26; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  K.J., Hewish D., Werkmeister J., Curtain C.,
                                                                                                                                                     70
                                                                                                                                                                                                                                                                                                                                                                                                                     Toxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Norton R., Rivett
                                                                                                                                                                       55 4
5 5 5
                                                                                                                                                                                                                                              67
                                                                                                                                                                                                                                                                                   544
644
644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of melittin. II. Interpretation of the structure."; 257:6016-6022(1982).
-VLTTGLPALISWIK---
                                                                                                                                                                                                                                                                                                                                                                                                                   Amidation;
                                                                                                                                                     7585
                                                                                                                                                                                           543
                                                                                                                                                                                                                                                70
                                                                                                                                                                                                                                                                                   544
69
644
644
                                                                                          66.0%;
                                                                                                                                                     X
X
                                                                          0;
                                                                                            Score 93;
Pred. No.
                                                                  Pred. No. 6.4e
0; Mismatches
                                                                                                                                                                                                                                                                               FORMYLATION (ABOUT 10% OF THE MOLECULES).
AMIDATION (G-70 PROVIDE AMIDE GROUP).
K -> S (IN MELITTIN 2; POSSIBLY AN
                                                                                                                                                                                                                                                                                                                                                                                                                 Formylation;
                                                                                                                                                   607F52C091C23BB6 CRC64;
                                                                                                                                                                                                                                              ROOG
                                                                                                                                                                                                                                                                   ARTIFACT
                                                                                                                                                                                                                                                                                                                                                            REMOVED BY A DIPEPTIDYLPEPTIDASE
                                                                                                                                                                                                                                              -> KRQQ (IN MELITTIN 2; POSSIBLY AN
                                                                        6.4e-09;
ches 0;
                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                   Signal;
                                     38
                                                                                                          Length 70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and the
                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                     3D-structure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kirkpatrick A.
                                                                          12;
                                                                        Gaps
                                                                        w
٠٠
```

RESULT 2 MEL_APIDO

밁 á

```
RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                             ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                 MEL_APIFL
P01504;
21-JUL-1986
21-JUL-1986
15-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEL_APIDO
P01502;
21-JUL-1986
21-JUL-1986
15-JUN-2002
"Structure of melittin isolated from two species of honey bees.";
FEBS Lett. 3:241-244(1973).

-i- FUNCTION: MAIN TOXIN OF BEE VENOM WITH STRONG HEMOLYTIC ACTIVITY.

-i- FUNCTION: MAIN TOXIN OF BEE VENOM WITH STRONG HEMOLYTIC ACTIVITY.

INTEGRATES INTO CELL MEMBRANES AND HAS MULTIPLE EFFECTS, PROBABLY

AS A RESULT OF ITS INTERACTION WITH NEGATIVELY CHANGED

PHOSPHOLIPIDS. IT INHIBITS WELL KNOWN TRANSPORT PUMPS SUCH AS THE

NA(+)-K(+)-ATPASE AND THE H(+)-K(+)-ATPASE. INCREASES THE

PERMEABILITY OF CELL MEMBRANES TO JONS, PARTICULARLY NA+ AND

INDIRECTLY CA2+, BECAUSE OF THE NA(+)-CA(2+)-EXCHANGE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                   Kreil G.;
                                                                                                                                                 SEQUENCE.
                                                                                                                                                                                             Aculeata;
                                                                                                                                                                                                                       Eukaryota;
                                                                                                                                                                                                                                      Apis florea (Little
                                                                                                                                                                                                                                                     Melittin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hemolysis;
MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProDom;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PIR; A01763; MEHBCD.
HSSP; P01501; 1BH1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 + + +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=75168194; PubMed=1093875;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Insecta; Pterygota;
Aculeata; Apoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Apis dorsata
                                                                                                                                                                            NCBI_TaxID=7463;
                                                                                                                                                                                                           Insecta; Pterygota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF01372; Melittin; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEBS Lett. 54:100-102(1975)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           between honeybees as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kreil G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=7462;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The structure
                                                                                                                                                                                                                                                                                                                                                                                                                               1 GIGAVLKXXXXVLTTGLPALISWIK 25
                                                                                                                                                                                                                                                                                                                                                                                                  1 GIGAILK----VLSTGLPALISWIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PERMÉABILITY OF CELL MEMBRANES TO IONS, PARTICULARLY NA+ AND INDIRECTLY CA2+, BECAUSE OF THE NA(+)-CA(2+)-EXCHANGE. SUBUNIT: MOMOMER AND HOMOTETRAMER (BY SIMILARITY). SUBCELLULAR LOCATION: Secreted. DATABASE: NAME-Protein Spotlight; NOTE-Issue 12 of July 2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S LEEL. 54:100-102(19/5).
FUNCTION: MAIN TOXIN OF BEE VENOM WITH STRONG HEMOLYTIC ACTIVITY.
FUNCTION: MAIN TOXIN OF BEE VENOM WITH STRONG HEMOLYTIC ACTIVITY.
INTEGRATES INTO CELL MEMBRANES AND HAS MULTIPLE EFFECTS, PROBABLY.
AS A RESULT OF ITS INTERACTION WITH NEGATIVELY CHANGED
PHOSPHOLIPIOS. IT INHIBITS WELL KNOWN TRANSPORT PUMPS SUCH AS THE
NA(+)-K(+)-ATPASE AND THE H(+)-K(+)-ATPASE. INCREASES THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WWW-"http://www.expasy.org/spotlight/articles/sptlt012.html"
                                                                                                                                                                                                                                                                                                                                                                                                                                                             19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PD014636;
                                                                                                                                                                                             Apoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IPR002116; Melittin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Toxin;
26
                                                                                                                                                                                                                        Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26 AA;
                                                                                                                                                                                                                                                                   (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Giant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . 01, Created)
. 01, Last sequence 41, Last annotations.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Amidation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Melittin; 1.
                                                                                                                                                                                                                                                                 01, Created)01, Last sequence update)41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            t honeybee).'
Arthropoda; Mandibulata; Pancrustacea; Hexapoda; Neoptera; Endopterygota; Hymenoptera; Apocrita; Apidae; Apis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2848 MW;
                                                                                                                                                                                           Apidae; Apis.
                                                                                                                                                                                                   honeybee).
Arthropoda; Mandibulata; Pancrustacea; Hexapoda;
Neoptera; Endopterygota; Hymenoptera; Apocrita;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61.7%;
76.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           deduced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                            2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 87; I
Pred. No. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AMIDATION. F1DA8F92514EF01C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           from
                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                  21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          melittin: phylogenetic relationships
rom sequence data.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update
                                                                                                                                                                                                                                                                                                                            26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .5e-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pancrustacea; Hexapoda;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>..</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ٠.
                                                                          PROBABLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
```

1;

```
MALPENDATI MALPENDATI ID PRANCE DE MACCO DE MACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFT
                                ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                028620;
01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-MAY-2000
16-OCT-2001
16-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RANTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MLP_RANTE
P56924;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hemolysis;
MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF01372; Melittin; 1.
ProDom; PD014636; Melittin; 1.
Hemolysis; Toxin; Amidation.
                                                                                                                                                                                                                                                                                                                                              RABIT
NPT2_RABIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WWW="http://www.expasy.org/spotlight/articles/sptlt012.html" PIR; A01765; MEHBCF. HSSP; P01501; 1BH1.
                                                                                                                                        Renal sodium-dependent pho-
cotransporter 2) (Na(+)/Pi
transport protein 2) (Rena
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Amphibian skin;
MOD_RES 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rana temporaria (European common frog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Amphibia; Batrachia; Anura; Neobatrachia; Ranoidea;
                                                                                                                                                                                                                              01-NOV-1997
15-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                             Oryctolagus cuniculus
Eukaryota; Metazoa; Cl
                                                                                        SLC34AL OR SLC17A2
                                                                                                                   transport protein
(NaPi-6).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Temporins, temporaria."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Barra D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Simmaco M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-97175050;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Melittin-like peptide (MLP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID-8407;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GIGAVLKXXXXVLTTGLPALISWIK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ν
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBUNIT: MOMOMER AND HOMOTETRAMER SUBCELLULAR LOCATION: Secreted. DATABASE: NAME-protein Spotlight; NOTE-Issue 12 of July 2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUBCELLULAR LOCATION: Secreted.
SIMILARITY: HIGH, TO A.MILLIFERA MELITTIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IGSALK----VLAGVLPSIVSWVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IGAVLKXXXXVLTTGLPALISWIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GIGAILK----VLATGLPTLISWIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IPR002116; Melittin.
                                                                                                                                                                                                                           7 (Rel. 35,
7 (Rel. 35,
2 (Rel. 41,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (Rel. 39, (Rel. 40, (Rel. 40)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mignogna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        antimicrobial peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Amidation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                242:788-792(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PubMed=9022710;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2819 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2313 MW;
                                Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .
ຜ.
                                                                                                                               (+)/P1 cotransporter 2) (Renal soc
(Renal Na(+)-dependent phosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        58.2%;
72.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36.2%;
                                                                                                                                                            Last sequence update)
Last annotation update)
Last annotation update)
Last annotation update)
Last sequence update up
(Rabbit).
hordata; Craniata; Vertebrata;
                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Canofeni S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>ა</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AMIDATION. F20E8F82400EF01C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 82; DB 1;
Pred. No. 1.7e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 51; DB 1;
Pred. No. 0.025;
5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AMIDATION.
0990320F9B0709B3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                 642 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Miele R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     European
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mangoni M.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                             Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ranidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        red
                                                                                                                                           cotransporter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     frog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                           2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1:
```

```
RESULT
1C01_S
  OC DET DE AC
                                                                                                                                    В
                                                                                                                                                        Ş
                                                                                                                                                                                                                            Matches
                                                                                                                                                                                         Query Match
Best Local
                              JLT 6
1C01_SAGOE STAN
1C01_SAGOE STAN
1C01_SAFC.1993 (Rel. 2
01-APR-1993 (Rel. 2
01-APR-1993 (Rel. 2
01-APR-1993 (Rel. 2
        01-APR-1993 (Rel. 25, Created)
01-APR-1993 (Rel. 25, Last sequence update)
01-APR-1993 (Rel. 25, Last annotation update)
01-APR-1993 (Rel. 25, Last annotation update)
Class I histocompatibility antigen, C alpha chain precursor.
Saguinus oedipus (Cotton-top tamarin).
                                                                                                                                                                                                                                     CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                              TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entities requires a license agreement (or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Am. J. Physiol. 268:E626-E633(1995).
-!- FUNCTION: MAY BE INVOLVED IN ACTIVELY INTO CELLS VIA NA+ COTRANSPORT IN THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Cloning of a rabbit renal Na-Pi cotransporter, which is regulated dietary phosphate.";
 Eukaryota; Metazoa;
                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                   DOMA I N
                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Transport; Symport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TIGRFAMS; TIGR01013;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF02690;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the European
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Biber J., Murer H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Verri T., Markovich D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-95251013;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
NCBI_TaxID=9986;
                                                                                                                                                                                                                                                                      MOD_RES
                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                    382
                                                                                                                                                          w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUBCELLULAR LOCATION: Integral membrane protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the European Bioinformatics Institute. There are no rest by non-profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEMBRANE
                                                                                                                                                        GAVLKXXXXVLTTGLPALISWI
                                                                                                                                    GOVAKVIOKVINTDLPAPFTWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 U20793; AAA77682.1;
Pro; IPR003841; Na_P
                                                                                                                                                                              Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                         189
351
374
416
                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                         491
                                                                                                                                                                                                                                                                                                                                                                                                                     167
169
                                                                                                                                                                                                                           AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Na_Pi_cotrans; 1.
                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed=7733319;
                                                                                                                                                                                                                                       469
490
516
542
564
564
572
372
372
3333
                                                                                                                                                                                                                                                                                                                                                                                               168
188
350
373
Chordata; Craniata; Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sodium
                                                                                                                                                                                                                            69431
                                                                                                                                                                                          32.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Na_Pi_cotrans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2a58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Perego C., Norbis
                                                                                                                                                                                                                            MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                transport; Transmembrane; Glycoprotein;
                                                                                                                                    403
                                                                                                                                                        24
                                                                                                                                                                                                                                               N-LINKED
                                                                                                                                                                                          Score 46;
Pred. No.
                                                                                                                                                                                                                                       N-LINKED
                                                                                                                                                                                                                                                                     PHOSPHORYLATION (BY PKC) (POTENTIAL).
                                                                                                                                                                                                                                                                                             M8 (POTENTIAL)
CYTOPLASMIC (F
                                                                                                                                                                                                                                                                                                                    EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                         M6 (POTENTIAL)
CYTOPLASMIC (F
                                                                                                                                                                                                                                                                                                                                                              EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                    CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                               M4 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                            EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                     EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                   LEUCINE-ZIPPER.
                                                                              PRT;
                                                                                                                                                                                                                           A48B85C001642A8B CRC64;
                                                                                                                                                                                                                                                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            It is produced through a collaboration informatics and the EMBL outstation -
                                                                             365
                                                                                                                                                                                                                                     (GLCNAC. . .) (POTENTIAL) (GLCNAC. . .) (POTENTIAL) (GLCNAC. . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (See http://www.isb-sib.ch/announce,
                                                                                                                                                                                          DB
4.9;
                                                                             À
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL).
                                                                                                                                                                                                                                                                                             (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                        (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   म
:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RENAL BRUSH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSPORTING PHOSPHATE
                                                                                                                                                                                                     ۳.
                                                                                                                                                                                                                                                                                                                   (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Usage
                                                                                                                                                                              10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Stange G.,
                                                                                                                                                                                                     Length 642;
                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ру
Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ough
he EMBL on
restrictions c
ant is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BORDER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sorribas
                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          outstation
                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             γď
                                                                                                                                                                              0
```

```
RRRROCCOSE D D AC
                                                                                                                                                                       RESULT
1A01_S
                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                              TRANSMEM
DOMAIN
DISULFID
DISULFID
CARBOHYD
                                                        Saguinus oedipus (Cotton-top tamarin).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Platyrrhini; Callitric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE;
MHC I; T.
                                              Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9490;
                                                                                             01-APR-1993 (Rel. 25, Created)
01-APR-1993 (Rel. 25, Last sequence
01-APR-1993 (Rel. 25, Last annotation)
Class I histocompatibility antigen,
                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This
SEQUENCE FROM N.A. MEDLINE=90111120; Watkins D.I., Letv
                                                                                                                                              P30515;
                                                                                                                                                                       SAGOE
                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SMART; SM00407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00047; 1g;
Pfam; PF00129; MHC_
ProDom; PD000050; M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR003006; Ig_MHC.
InterPro; IPR003597; Ig_c1.
InterPro; IPR001039; MHC_I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M33477; AAA36953.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entities requires a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New World primate (Saguinus oedipus). Natural selection acts positions that may affect peptide presentation to T cells.";
J. Immunol. 144:1136-1143(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Watkins D.I., Letvin N.L., Hughes A.L., Tedder T.F.;
"Molecular cloning of cDNA that encode MHC class I molecules
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. MEDLINE-90111120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ......aria; Eutheria;
NCBI_TaxID=9490;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSSP; Q95352;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ÷
                                                                                                                                                          LA01_SAGOE
                                                                                                                                                                                                                     310
                                                                                                                                                                                                                                           1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBI outstation - European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way iffed and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                THE IMMUNE SYSTEM.
SUBUNIT: DIMER OF ALPHA CHAIN AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MICROGLOBULIN).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FUNCTION: INVOLVED IN THE PRESENTATION OF FOREIGN ANTIGENS
                                                                                                                                                                                                                     GIVAILAILGAVVTGAVVAAVMWRKKSSDKKGGSYSQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PS00290; IG_MHC; 1
                                                                                                                                                                                                                                                                                                                                25
115
207
299
299
309
333
125
227
                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 HHK
                                                                                                                                                                                                                                                                                                                    AA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IGC1; 1.
                                                                                                                                                           STANDARD;
PubMed=2104912;
vin N.L., Hughes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed-2104912;
                                                                                                                                                                                                                                                                                                                                          114
206
298
308
332
188
283
                                                                                                                                                                                                                                                                                                                                                                                                                                                    24
365
                                                                                                                                                                                                                                                                                                                                110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1, 1,
1, 1,
1, 1.
                                                                                                                                                                                                                                                                                                                    40829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  license agreement (See http://www
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Primates; Platyrrhini; Callitrichidae; Saguinus.
                                                                                                                                                                                                                                                                               31.98;
                                                                                                          Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Glycoprotein;
                                                                                                                                                                                                                                                                                                                    M.
                                                                                                                                                                                                                                                                                                                                                                                        BY SIMILARITY.

CLASS I HISTOCOMPATIBILITY ANTIGEN,
C ALPHA CHAIN.
EXTRACELLULAR ALPHA-1.
EXTRACELLULAR ALPHA-2.
EXTRACELLULAR ALPHA-3.
CONNECTING PEPTIDE.
                                                                                                                                                                                                                                                                                                                              BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNA
                                                                                                                                                                                                                                                                               Score 45; DB 1;
Pred. No. 4.2;
                                                                                                                                                                                                                                                                                                                                                                  CYTOPLASMIC TAIL.
                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                  -LINKED (GLCNAC. . .) (B
D6A0F974104BA1EE CRC64;
                                                                                                                                                                                                                                                                   Mismatches
 A.L.,
                                                                                              on update)
A alpha chain precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Signal.
                                                                                                                                                          365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A BETA CHAIN (BETA-2-
 Tedder T.F.;
                                                                                                                                                          A
                                                             Callitrichidae;
                                                                                                                                                                                                                                                                    21;
                                                                                                                                                                                                                                                                                           Length 365
                                                                                                                                                                                                                                                                    Indels
                                                                       Euteleostomi;
                                                                                                                                                                                                                                                                                                                              (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .isb-sib.ch/announce/
                                                            Saguinus
                                                                                                                                                                                                                                                                    0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         þ
                                                                                                                                                                                                                                                                    0
```

```
밁
                       ş
                                                                                               Query Match
Best Local S
Matches 11
                                                                                                         DOMAIN
DISULFID
DISULFID
CARBOHYD
                                                                                                                                                                                             DOMAIN
DOMAIN
                                                                                                                                                                                                                                                              Pfam; PF00047; 1g; 1.
Pfam; PF00129; MHC_I: 1.
ProDom; PD000050; MHC_I: 1.
SMART; SM00407; IGCI: 1.
PROSITE: PS00290; IG_MHC: 1.
                                                                                                                                                                     DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                 entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            positions that may affect peptide presentation to T cells.";
J. Immunol. 144:1136-1143(1990).
T. FUNCTION: INVOLVED IN THE PRESENTATION OF FOREIGN ANTIGENS
THE IMMUNE SYSTEM.
THE IMMUNE SYSTEM.
                                                                                               SEQUENCE
                                                                                                                                                                                                                                CHAIN
                                                                                                                                                                                                                                                        MHC
                                                                                                                                                                                                                                                                                                                           InterPro; IPR003006; Ig_MHC.
InterPro; IPR003597; Ig_cl.
InterPro; IPR001039; MHC_I.
                                                                                                                                                                                                                                                                                                                                                                EMBL; M33475; AAA36951.1; -. HSSP; P30685; 1A9B.
                                                                                                                                                                                                                                                                                                                                                                                                                            use by non-profit institutions as long as modified and this statement is not removed. U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Molecular cloning of cDNA that encode MHC class I molecules
New World primate (Saguinus oedipus). Natural selection acts
                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                            SIGNAL
  310
                       1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MICROGLOBULIN).
GIVAILAILGVVVTGAVVAAVMWRKKSSDKKGGSYSO
                                                                                                                                                                                                                                                     Transmembrane;
                                                           Similarity
                                                                                             365
                                                                                                           25
115
207
299
309
333
125
227
                                                 Conservative
                                                                                               AA;
                                                                                                                     114
206
208
308
332
188
188
                                                                                                           110
                                                                                               40973
                                                         31.28; 29.78;
                                                                                                                                                                                                                           Glycoprotein; Signal.

BY SIMILARITY.

CLASS I HISTOCOMPATIBILITY ANTIGEN.
                                                                                               ¥.
                                              Score 44; DB 1
Pred. No. 6.1;
5; Mismatches
                                                                                              N-LINKED (GLCNAC. ..) (B
B34B24FB6848E373 CRC64;
                                                                                                                     BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                             CYTOPLASMIC TAIL.
                                                                                                                                                                     EXTRACELLULAR ALPHA-2 EXTRACELLULAR ALPHA-3 CONNECTING PEPTIDE.
                                                                                                                                                                                                       A ALPHA CHAIN.
EXTRACELLULAR ALPHA-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Natural selection acts sentation to T cells.";
                                                                      DB 1;
                         37
                                               21;
                                                                                                                                                                                                                                                                                                                                                                                                                            Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                      its content
                                                                     Length 365;
                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                             γď
                                                                                                         (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                             for
                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    trom
                                                                                                                                                                                                                                                                                                                                                                                                                                                               outstation
                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                            in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    D
                                                                                                                                                                                                                                                                                                                                                                                                                                                    o
                                               0
```

```
RESULT 8
                                                                                                         Emericella nidulans (Aspergillus nidulans).
Eukaryota; Fungi; Ascomycota; Pezizomycotina;
Eurotiales; Trichocomaceae; Emericella.
                                                                                                                                           NUDA
                                                                                                                                                              01-NOV-1995 (Rel.
01-NOV-1995 (Rel.
30-MAY-2000 (Rel.
                                                                                                                                                                                                                     EMENI
                                                      SEQUENCE FROM N.A. MEDLINE=94181539; I Xiang X., Beckwith
                      Proc. Natl.
                                                                                                                                                     Dynein heavy
                                                                                                                                                                                      01-NOV-1995
                                                                                                                                                                                               P45444;
                                                                                                                                                                                                           DYHC_EMENI
                                           "Cytoplasmic
                                                                                                NCBI_TaxID=5072;
FUNCTION: DYNEIN HAS ATPASE MOTOR FOR THE INTRACELLULAR
                     Acad. Sci. U.S.A. 91:2100-2104(1994)
                                         dynein is involved
                                                                                                                                                      chain,
                                                                                                                                                                                                           STANDARD;
                                                                                                                                            32, Createa)
32, Last sequence update)
39, Last annotation update)
... cytosolic (DYHC).
                                                      PubMed=8134356;
h S.M., Morris F
                                                                                                                                                                                                           PRT;
                                           in nuclear migration
 RETROGRADE MOTILITY
            ACTIVITY.
                                                       R. N.
                                                                                                                                                                                                           4344
                                                                                                                                                                                                          A
            CYTOPLASMIC
                                                                                                                     Eurotiomycetes;
 ç
                                            'n
            DYNEIN ACTS
 VESICLES
                                            Aspergillus
 AND
```

ť

```
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                          SFRI_ARATH STANDARD; PRT; 303 AA.

022315; 022314; 039201;

15-DEC-1998 (Rel. 37, Last sequence update)

15-DEC-1998 (Rel. 37, Last sequence update)

15-JUN-2002 (Rel. 41, Last annotation update)

Pre-mRNA splicing factor sF2 (SR1 protein).

SF2 OR ATIGO3840 OR F22D16.16 OR F22D16_30.

Arabidopsis thaliana (Mouse-ear cress).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Rosid.

Spermarcphyta; Magnoliophyta; endicotyledons; core endicots; Rosid.

Eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
DOMAIN
                                                                                                                                                                                                                               SEQUENCE FROM N.A. MEDLINE=95372342; PubMed=7644475;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4284 TGLPAFVEWVNKLPERE 4300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Motor protein;
DOMAIN 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIR; A53489; A53489.
InterPro; IPR004273; Dynein_heavy.
Pfam; PF03028; Dynein_heavy; 1...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entities requires a license agreement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; U03904; AAA18338.1; -.
STRAIN-cv. Columbia;
                                                                           STRAIN≖cv.
Su C.-L.,
                                                                                                                                                 Lazar G., Schaal T., Maniatis T., Goodman H.M.;
"Identification of a plant serine-arginine-rich protein similar
mammalian splitcing factor SF2/ASF.";
Proc. Natl. Acad. Sci. U.S.A. 92:7672-7676(1995).
                                                                                                                                                                                                                                                                                          NCBI_TaxID-3702;
                  SEQUENCE FROM N.A
                                                         Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15 TGLPALISWIKXXXXRK 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INTERMEDIATE AND LIGHT CHAINS.
SUBCELLULAR LOCATION: Cytoplasmic.
SIMILARITY: BELONGS TO THE DYNEIN HEAVY CHAIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANELLES ALONG MICROTUBULES. REQUIRED TO MAINTAIN UNIFORM NUCLEAR DISTRIBUTION IN HYPHAE. SUBUNIT: CONSISTS OF AT LEAST TWO HEAVY CHAINS AND A NUMBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pean Bioinformatics Institute. There are no restrictions non-profit institutions as long as its content is in and this statement is not removed. Usage by and for cor
                                                                                                                  FROM N.A.
                                                     Schuler M.A.; (APR-1997) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Columbia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Microtubules;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    933
1341
1564
1656
2063
3270
3463
3798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1940
2230
2599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31.2%;
41.2%;
                                                       ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      492470
                                                       the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S: Dynein; ATP-binding; Coiled coil.

COILED COIL (POTENTIAL).

ATP (POTENTIAL).

ATP (POTENTIAL).

ATP (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (POTENTIAL).
(POTENTIAL).
302A588C4F8BD019 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TWO HEAVY CHAINS AND A NUMBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 4344;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                               Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OF.
                                                                                                                                                                                            ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          commercia1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
```

οy

밁

DЬ

121

VLVTGLPSSASW 132

```
Ş
                                                                                                                                               RX MEDLINE=21016719; PubMed=11130712;
RA Theologis A., Ecker J.R., Palm C.J., Federspiel N.A., Kaul S.,
RA White O., Alonso J., Altafi H., Aradjo R., Bowman C.L., Brooks S.Y.,
RA White O., Alonso J., Altafi H., Aradjo R., Bowman C.L., Brooks S.Y.,
RA Buehler E., Chan A., Chao Q., Chen H., Cheuk R.F., Chin C.W.,
RA Chung M.K., Conn L., Conway A.B., Conway A.R., Creasy T.H., Dewar K.,
RA Chung M.K., Conn L., Conway A.B., Conway A.R., Creasy T.H., Dewar K.,
RA Chung M.K., Conn L., Conway A.B., Conway A.R., Creasy T.H., Dewar K.,
RA Chung M.K., Conn L., Conway A.B., Conway A.R., Creasy T.H., Dewar K.,
RA Chung M.K., Conn L., Conway A.B., Conway A.R., Creasy T.H., Lewis T.,
RA Hunter J.L., Jenkins J., Johnson-Hopson C., Khan S., Khaykin E.,
RA Kim C.J., Koo H.L., Kremenetskaia I., Kurtz D.B., Kwan A., Lam B.,
RA Kim C.J., Koo H.L., Kremenetskaia I., Kurtz D.B., Kwan A., Lam B.,
RA Langin-Hooper S., Liee A., Lee J.M., Lenz C.A., Li J.H., Li Y.-P.,
RA Lin X., Liu S.X., Liu Z.A., Luros J.S., Maiti R., Marziali A.,
RA Lin X., Liu S.X., Liu Z.A., Luros J.S., Maiti R., Marziali A.,
RA Militscher J., Miranda M., Nguyen M., Nierman W.C., Osborne B.I.,
RA Alin X., Liu S.A., Luros J.S., Maiti R., Marziali A.,
RA Militscher J., Miranda M., Nguyen M., Nierman W.C., Osborne B.I.,
RA Sun H., Tallon L.J., Tambunga G., Toriumi M.J., Town C.D.,
RA Sun H., Tallon L.J., Tambunga G., Toriumi M.J., Town C.D.,
RA Wu D., Yu G., Fraser C.M., Venter J.C., Davis R.W.;
RT Tabliana ";
RT Tabliana";
RT Tabliana ";
RT Tabliana";
RT Tabliana ";
R
                                                          Query Match
Best Local S
Matches 8
                                                                                                                                                                 VARSPLIC
VARSPLIC
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; M98340; AAA32856.1; --
EMBL; AF001035; AAB71385.1; --
EMBL; AF001035; AAB71386.1; --
EMBL; AC009525; AAF02881.1; --
HSSP; P19339; 1SXL.
                                                                                                                                                                                                                                                                           DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS00030; RRM_RNP_1; FALSE_NEG.
mRNA processing; mRNA splicing; Nuclear protein;
Phosphorylation; Alternative splicing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -!- PTM: EXTENSIVELY PHOSPHORYLATED ON SERINE RESIDUES IN THE RS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -!- SUBCELLULAR LOCATION: Nuclear (Potential).
-!- ALTERNATIVE PRODUCTS: 2 ISOFORMS; A LONG FORM/SF2A
- AND A SHORT FORM/SF2B; ARE PRODUCED BY ALTERNATIVE
-!- TISSUE SPECIFICITY: UBIQUITOUS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nature 408:816-820(2000).

-i- FUNCTION: CAN PROMOTE SPLICE SITE SELECTION IN VITRO PRESUMABLY
-i- RUNCHONIZING THE EFFECTS OF THE A1 HETEROGENEOUS NUCLEAR
RIBONUCLOPROTEIN. MAY HAVE AN ESSENTIAL FUNCTION DURING EARLY
                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR000504; RNA_rec_mot Pfam; PF00076; rrm; 2.
                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SMART; SM00360;
12 VLTTGLPALISW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY: CONTAINS 2 RNA RECOGNITION MOTIFS (RRM). SIMILARITY: BELONGS TO THE SR FAMILY OF SPLICING FACTORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PLANT DEVELOPMENT.
                                                            Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                 PS50102; RRM;
                                                            Conservative
                                                                                                                                             AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RRM;
                 23
                                                                                                                                             140
33729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
                                                                              30.5%;
                                                                                                                                               ¥.
                                                                              Score 43;
Pred. No.
                                                                                                                                                                      ž
                                                                                                                                                                                   MISSING (IN ISOFORM SF2B)
G -> W (IN REF. 1).
P -> A (IN REF. 1).
                                                                                                                                                                                                                                                  RNA-BINDING (RRM) 2
ARG/SER-RICH (RS DOMAIN)
LYS/PRO/SER-RICH (PSK DO
SRSRSR -> YGFTYD (IN ISO
                                                                                                                                                                                                                                                                                                                                        RNA-BINDING (RRM
GLY-RICH (HINGE
                                                                                                                                             6530F9CB628B8EFA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bioinformatics
                                                            Mismatches
                                                                                                                                                                      (IN REF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               There are no restrictions ong as its content is in
                                                                              DB 1;
7.5;
                                                                                                                                                                                                                                                                                                                                                              (RRM) 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Usage
                                                                                                                                                                                                                                                                                                                                     REGION).
                                                                                                                                                                                                                                                       (IN ISOFORM
                                                                                                Length 303;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and the
                                                                                                                                                                                                                                                                                                                                                                                                    RNA-binding; Repeat;
                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               γd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (SHOWN HERE)
SPLICING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL
                                                                                                                                                                                                                                                     SF2B).
                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              collaboration
. outstation -
                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               commercia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ВУ
                                                        0
```

```
RESULT 10
YHFM_ECOLI
ID YHFM_ECOLI
AC P45539; P76
                                                                                                                                                                                      DEGP.
                                                                                                         ş
 DA E
                                                                                    밁
                                                RESULT 11
                                                                                                                                    Query Match
Best Local S
Matches 8
                                     RHIME
                                                                                                                                                                                     TRANSMEM
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-K12 / MG1655;
MEDLINE-97426617; PubMed-9278503;
MEDLINE-97426617; PubMed-9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V
Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
Q52894;
30-MAY-2000
                        DEGP_RHIME
                                                                                                                                                                                                             TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00324; aa_permeases;
                                                                                                                                                                                                                                                                                                                                                                                                             EcoGene; EG12908; yhfM
                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; U18997; AAA58167.1; ALT_SEQ. EMBL; AE000413; AAC76395.1; ALT_INIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as sond as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation between Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1995 (Rel. 32, Created)
15-UIL-1998 (Rel. 36, Last sequence
16-CCT-2001 (Rel. 40, Last annotation
Hypothetical transport protein yhfm.
                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                                                                                                         Hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "The complete genome sequence of Escherichia coli K–12."; Science 277:1453–1474(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mau B., Shao Y.;
                                                                                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                                                                       TRANSMEM
                                                                                                                                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                                                                                                  TRANSMEM
                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR002293;
                                                                                    423
                                                                                                                                                                                                                                                              RANSMEM
                                                                                                                                                                                                                                                                                                                                                                                    nterPro;
                                                                                                           12 VLTTGLPALISWIK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PERMEASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY: BELONGS TO THE ARCD/CADB/GERAB/LYSI FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBCELLULAR LOCATION: Integral membrane protein. Inner membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Potential).
                                                                                    VIATGLPAYAFWAK 436
                                                                                                                                    Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P76686;
                                                                                                                                                                                                                                                                                                                                               proteome.
                                                                                                                                                                                                                                                                                                                                                                                   IPR004841; Permease
                                                                                                                                                                                     10
38
93
121
155
181
181
236
273
334
355
389
 (Rel.
                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                            protein;
                                                                                                                                                                                      ξ
                         STANDARD;
 Created)
                                                                                                                                                                                      47576 MW;
                                                                                                                                                 30.5%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                 AA/rel_prmeasel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last sequence up
                                                                                                                                                                                                                                                                                                                                                            Transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gamma subdivision; Enterobacteriaceae;
                                                                                                                                                 Score 43;
Pred. No.
                                                                                                                                                                                                            POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                             POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                               POTENTIAL.
POTENTIAL.
                                                                                                                                                                                     POTENTIAL.
B98DF5944A5E1FEF CRC64;
                                                                                                                                                                                                                                                POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                            Transmembrane; Inner membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          445 AA
                         504
                                                                                                                                                            DB
                                                                                                                                                              1;
                                                                                                                                                            Length 445;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ç
                                                                                                                                     0;
                                                                                                                                      Gaps
                                                                                                                                      0;
```

```
30-MAY-2000 (Rel. 39, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Probable serine protease do-like precursor (EC 3.4.21.-).
DEGP1 OR DEGP OR R01021 OR SMC02365.
Rhizobium meliloti (Sinorhizobium meliloti).
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;
                                                                                               ACT_SITE
ACT_SITE
ACT_SITE
CONFLICT
                                                                                                                                                                           CHAIN
DOMAIN
                                                                                                                                                                                                                                                     Pfam; PF00089; trypsin; I.

pfam; PF00595; PDZ; 2.

PRINTS; PR00834; PROTEASES2C.

PRINTS; PR00839; V8PROTEASE.

SMART; SM00228; PDZ; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no will modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-96146524; PubMed-8550509; Glazebrook J., Ichige A., Walker G.C.; Glazebrook J. Ichige A., Walker G.C.; "Genetic analysis of Rhizoblum meliloti bacA-phoA fusion results identification of degP: two loci required for symblosis are close linked to degP.";
                                                                                                                                                  DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                   EMBL; U31512; AAC43669.1; ALT_INIT. EMBL; AL591785; CAC45593.1; -. MEROPS; S01_273; -.
                                                                                                                                                                                                                                                                                                                InterPro; IPR001478; PDZ.
InterPro; IPR001940; Protease2C.
InterPro; IPR000126; Ser_proteas_V8.
InterPro; IPR001254; Ser_protease_Try.
                                                                                                                                                                                                                                                                                                                                                                                                                      entities requires a license agreement (See http://www.isb-slb.ch/announce, or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=21396507; PubMed=11481430;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  J. Bacteriol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-1021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=382;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rhizobiaceae;
          CONFLICT
                                                                                                                                                                                                      SIGNAL
                                                                                                                                                                                                                Complete
                                                                                                                                                                                                                               Hydrolase;
                                                                                                                                                                                                                                          PROSITE;
                                                                                                                                                                                                                                          PS50106;
                                                                                                                                                                                                                  proteome
                                                                                                                                                                                                                            Serine protease;
          464
                                                                                                              27
113
287
401
140
170
244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sinorhizobium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   178:745-752(1996).
                                                                                                                                                                                                                                            PDZ;
                                                                                                   26
504
286
286
378
491
140
170
170
          504
                                                                                                                                                                                                                                            N
                                                                                                                                                                                                                              Periplasmic; Repeat; Signal;
                                                                                   CHARGE RELAY SYSTEM (POTENTIAL).
CHARGE RELAY SYSTEM (POTENTIAL).
CHARGE RELAY SYSTEM (POTENTIAL).
LL -> PV (IN REF. 1).
PSFANVYDAVSPAVVSVRVQARERYSDDESNFTFDFGGRGF
         KTVTSSPTTTSSPTART (IN REF. 1).
KSADDVLKVINNAKKDGRSKALFQIEAQEGSRFVALPITQG
                                              EDLPEDHPLRREFEREFAPRENDRADRWRDRRGPRGEGRLRP RAQGSGFFITEDGYLVTNNHVVSDGSA -> AVSPMMSTPF RRRSSPSACRHVNASATMKATSPSISAAAGSRTCRKTIRCG
                                                                                                                                                                              CATALYTIC.
                                   VSSANSLRVKMTVPIVGATAAVRVAKVVSVRGRKAPASSSP
                                                                                                                                                                                          POTENTIAL PROBABLE :
                                                                                                                                                                                          SERINE PROTEASE DO-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a collaboration -
MBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            closely
                                                                                                                                                                                                                                                                                                                                                                                                                                                 for commercia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
```

```
RESULT
CARB_SY
            TIRE CONTRACTOR CONTRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                   InterPro; IPR005479; CPase_L_D2.
InterPro; IPR005480; CPase_L_D3.
InterPro; IPR005481; CPase_L_N.
InterPro; IPR004362; MGS_like.
Pfam; PP00289; CPSase_L_Chain; 2.
Pfam; PF002787; CPSase_L_D2; 2.
Pfam; PF02787; CPSase_L_D3; 1.
Pfam; PF02787; CPSase_L_D3; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARB_SYNY3
Q55756;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           between
the Euro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-JUN-2002 (Rel. 41, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Carbamoyl-phosphate synthase large chain (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-JUN-2002
15-JUN-2002
15-JUN-2002
                                                                                                     PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                          EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SYNY3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Sequence analysis of the genome of the unicellular cyanobacterium Synechocystis sp. strain PCC6803. II. Sequence determination of the entire genome and assignment of potential protein-coding regions.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARB OR SLL0370
                                                      Arginine biosynthesis; Pyrimidine biosynthesis; Ligase; ATP-binding; Manganese; Complete proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                or send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shimpo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Miyajima
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kaneko
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. MEDLINE-97061201;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=1148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Synechocystis sp. (strain PCC 6803). Bacteria; Cyanobacteria; Chroococcales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 phosphate synthetase ammonia chain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR005483; CPase_L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GIGAVLKXXXXVLTTGLPALIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATALYTIC ACTIVITY: 2 ATP + L-glutamine + CO(2) + H(2)O phosphate + L-glutamate + carbamoyl phosphate. COPACTOR: Binds three manganese ions (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PATHWAY: Arginine biosynthesis.

PATHWAY: Pyrimidine biosynthesis; first step.

SUBUNIT: Composed of two chains; the small (or glutamine) chain promotes the hydrolysis of glutamine to ammonia, which is used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SWISS-PROT entry is copyright. It is produced through ween the Swiss Institute of Bioinformatics and the EN European Bioinformatics Institute. There are no restr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     similarity).
SIMILARITY: BELONGS TO THE CARB FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the large (or ammonia) chain to synthesize carbamoyl phosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GLAAVL-----LTTGLPAEVA 24
                                                                                                                                                                                                                                                                                                                                                                                          D64002; BAA10403.1; ALT_INIT P00968; 1A9x.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l Similarity
11; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                           s requires a license agreement (See an email to license@isb-sib.ch).
                                                                                                                                                  PR00098;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          non-profit institutions as long and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ., Sato S., Kotani H., Tanaka A., Asamizu E., Nakamura Y., N., Hirosawa M., Sugiura M., Sasamoto S., Kimura T., Matsuno A., Muraki A., Nakazaki N., Naruo K., Okumura T., Takeuchi C., Wada T., Watanabe A., Yamada M., Yasuda M.,
                                                                                                     PS00866; CPSASE_1; 1. PS00867; CPSASE_2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3:109-136(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                    CPSASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                41,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PubMed-8905231;
            403
553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53035 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30.5%;
50.0%;
Complete proteome.
CARBOXYPHOSPHATE SYNTHETIC
OLIGOMERIZATION DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            D7E82BB9981EA23C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Synechocystis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6.3.5.5) (Carbamoyl-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 504;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ЬY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                            Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for commercia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (By
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ņ
```

```
RESULT 13
NPT2_HUMAN
  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NPT2_HUMAN
Q06495;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NP_BIND
NP_BIND
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Renal sodium-dependent phosphate transport protein 2 (Sodium/phosphate cotransporter 2) (Na(+)/Pi cotransporter 2) (Renal sodium-phosphate transport protein 2) (Renal Na(+)-dependent phosphate cotransporter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-FEB-1995 (Rel. 31, Created)
01-FEB-1995 (Rel. 31, Last annotation update)
15-JUN-2002 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
DOMAIN
                                                                                                    MIM;
                                                                                                                                                                  the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed. entities requires a license agreement (See
                                              Phosphorylation
                                                       Transport;
                                                                               Pfam;
                                                                                                               Genew;
                                                                                                                          PIR; B48189;
                                                                                                                                     EMBL; L13258; AAA36354.1;
                                                                                                                                                         or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                              This
                                                                                                                                                                                                                                                                                                                                 Magagnin S., Werner Biber J., Murer H.;
                                                                                                                                                                                                                                                                                                                                                     MEDLINE*93317607; PubMed=8327470;
                                                                                                                                                                                                                                                                                                                                                                  TISSUE-Kidney;
                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                               SLC34A1 OR SLC17A2 OR NPT2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
 TRANSMEM
              DOMAIN
                      TRANSMEM
                                   DOMAIN
                                                                  TIGRFAMS;
                                                                                         InterPro;
                                                                                                                                                                                                                                                                                             "Expression cloning of human and rat renal cortex Na/Pi cotransport.";
Proc. Natl. Acad. Sci. U.S.A. 90:5979-5983(1993).
-i- FUNCTION: MAY BE INVOLVED IN ACTIVELY TRANSPORTING PHOSPHATE
                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        996 GVEVVLK-----LHEGRPHVIDWIK 1015
                                                                                                                                                                                                                                               SUBCELLULAR LOCATION: Integral membrane protein. TISSUE SPECIFICITY: KIDNEY, AND LUNG.
                                                                                                                                                                                                                                                                                   INTO CELLS VIA NA+
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GIGAVLKXXXXVLTTGLPALISWIK 25
                                                                                                                                                                                                               SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EN
                                                               PF02690; Na_Pi_cotrans; 1.
AMS; TIGR01013; 2a58; 1.
                                                                                                               HGNC:11019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                        IPR003841; Na_Pi_cotrans
                                                       Symport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  554
153
304
286
286
300
302
837
849
1081
 104
126
146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                          B48189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            944
1081
553
1081
211
354
286
286
300
300
302
837
 103
125
145
163
                                                                                                               SLC34A1
                                                                                                                                                                                                                                                                                                                                          Α.,
                                                       Sodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  119030
                                                                                                                                                                                                                                                                                    COTRANSPORT
                                                                                                                                                                                                                                                                                                                                           Markovich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATP (POTENTIAL).

ATP (POTENTIAL).

ATP (POTENTIAL).

MANGANESE 1 (BY SIMILARITY).

MANGANESE 1 AND 2 (BY SIMILARITY).

MANGANESE 2 (BY SIMILARITY).

MANGANESE 3 (BY SIMILARITY).

MANGANESE 3 (BY SIMILARITY).
                                                       transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ¥.
CYTOPLASMIC (POTENTIAL).
M1 (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
M2 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 42.5;
Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBAMOYL PHOSPHATE SYNTHETIC DOMAIN. ALLOSTERIC DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0C2E0D3905B40EE6 CRC64;
                                                                                                                                                                                                                                                                                                                                           D.,
                                                                                                                                                                                                                                                                                    Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 639
                                                      Transmembrane;
                                                                                                                                                                                                                                                                                                                                           Sorribas
                                                                                                                                                                                                    There are no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                   RENAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DВ
                                                                                                                                                                                                                                                                                                                                                                                                               Hominidae;
                                                                                                                                                                                           as its content
                                                                                                                                                                               Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1:
                                                                                                                                                                                                                                                                                                                                         ۷.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ?;
                                                                                                                                                                                                                                                                                    BRUSH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1081;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                         Stange
                                                                                                                                                                               bу
                                                                                                                                                                                                                                                                                                                                                                                                                         Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                               Homo
                                                        Glycoprotein.
                                                                                                                                                                                                                                                                                    BORDER
                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                  a collaboration -
                                                                                                                                                                                 for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ç,
                                                                                                                                                                      .ch/announce,
                                                                                                                                                                                                                 outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                      9
                                                                                                                                                                                           ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ::
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                        LUXA_PHOPO
P24113;
01-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TRANSMEM
DOMAIN
                                                                                                                                                                                      Ferri S.R., Meighen E.A.;
"A lux-specific myristoyi transferase in luminescent bacteria"
                                                                                                                                                                                                                                                         MEDLINE-91207448; PubMed-2018544;
Ferri S.R., Soly R.R., Szittner R.B., Me
"Structure and properties of luciferase
phosphoreum.";
                                                                                                                                                                                                                                                                                                                                                                                                01-MAR-1992 (Rel. 21,
01-MAR-1992 (Rel. 21,
01-OCT-1996 (Rel. 34,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOD.
       EMBL; M65067; AAA70297.1;
EMBL; M64224; AAA25627.1;
                                       entitles requires a license agreement (See http://www.isb-sib.
or send an email to license@isb-sib.ch).
                                                             modified and
                                                                                  the
                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                       J. Biol.
                                                                                                                                                                                 ç
                                                                                                                                                                                                                 MEDLINE-91302295;
                                                                                                                                                                                                                            SEQUENCE OF 1-41 FROM N.A
                                                                                                                                                                                                                                                 Blochem. Blophys. Res.
                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=659;
                                                                                                                                                                                                                                                                                                                                     Photobacterium.
                                                                                                                                                                                                                                                                                                                                               Photobacterium phosphoreum Bacteria; proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                              alpha chain).
                                                                                                                                                                                                                                                                                                                                                                                          Alkanal
                                                                                                                                                                                                                                                                                                                                                                                                                                                         PHOPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   379
                                                                                                                                                eukaryotic serine esterases ";
Biol. Chem. 266:12852-12857(1991).
FUNCTION: LIGHT-EMITTING REACTION IN LUMINOUS BACT
CATALYTIC ACTIVITY: RCHO + FMNH(2) + O(2) - RCOOH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         w
                                                                                  European Bioinformatics Institute.
                                                                                                                            SUBUNIT: HETERODIMER OF AN ALPHA AND A BETA CHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GOVAKVIOKVINTDFPAPFTWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAVLKXXXXVLTTGLPALISWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                         monooxygenase
                                                          bean Bioinformatics Institute. There are no restrictions non-profit institutions as long as its content is in and this statement is not removed. Usage by and for content is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                PubMed-2071574;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 68937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29.8%;
                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation updat
alpha chain (EC 1.14.
                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                 Commun.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MW;
                                                                                                                                                                                                                                                                                                                                              gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             M4 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
M5 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     M8 (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYTOPLASMIC
M7 (POTENTIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CYTOPLASMIC (POTENTIAL).
M3 (POTENTIAL).
EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PHOSPHORYLATION (BY PKC) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LEUCINE-ZIPPER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                 176:541-548(1991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       65D21D968C35D61B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                               subdivision; Vibrionaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                               346
                                                                                                                                                                                                                                                                                Meighen
                                                                                                                                                                                                                                                                                                                                                                                       update)
1.14.14.3) (Bacterial luciferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GLCNAC. . .) (POTENTIAL) (GLCNAC. . .) (POTENTIAL) (GLCNAC. . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bd
                                                                                                                                                                                                                                                                     from
                                                                                                                                                                                                                                                                                                                                                                                                                                               ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11;
                                                                                                                                                                                                                                                                     Photobacterium
                                                                                                                                                                                                                                                                                E.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 639;
                                                                                                                                                           BACTERIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                  FMN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                   ch/announce/
                                                                                                                                                  H(2)0
                                                                                                                                                                                           related
                                                               commerci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                      ņ
                                                                                   9
                                                                      way
                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
RESULT 15
LXA1_PHOLE
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SQ STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-MAR-1989 (Rel. 10, 01-MAR-1989 (Rel. 10, 11) 16-OCT-2001 (Rel. 40, 11) Alkanal monooxygenase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
CONFLICT
SEQUENCE
                                                                                     Illarionov B.A., Blinov V.M., Donchenko A.P., Protopopova M.V., Karginov V.A., Mertvetsov N.P., Gitelson J.I.; "Isolation of bioluminescent functions from Photobacterium leiognathi: analysis of luxA, luxB, luxG and neighboring genes. Gene 86:89-94(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00296; bac_luciferase; 1.
PRINTS; PR00089; LUCIFERASE.
PROSITE; PS00494; BACTERIAL_LUCIFERASE; 1.
                                                                                                                                                                                                                           Gitelson J.I.;
                                                                                                                                                                                                                                                                                                                            Illiarinov B.A., Gitelson J.I.;
                                                                                                                                                                                                                                                                                                                                                                                             Bacteria; Proteobacteria;
Photobacterium.
NCBI_TaxID=658;
          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                 -!- FUNCTION: LIGHT-EMITTING
-!- CATALYTIC ACTIVITY: RCHO
                                                                                                                                             MEDLINE=90185252; PubMed=2311938;
                                                                                                                                                          STRAIN-554
                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                         "Nucleotide sequence of genes for alpha- and luciferase from Photobacterium leiognathi."; Bioorg. Khim. 14:412-415(1988).
                                                                                                                                                                                                                                                 MEDLINE-88251495;
                                                                                                                                                                                                                                                              STRAIN-554
                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                             Nucleic Acids
                                                                                                                                                                                                                                                                                                       region."
                                                                                                                                                                                                                                                                                                                                                               STRAIN-55
                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                               Photobacterium leiognathi.
                                                                                                                                                                                                                                                                                                                                                                                                                                            LUXA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       alpha chain).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EXA1_PHOLE P09140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Flavoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Photoprotein; Luminescence; Oxidoreductase; Flavoprotein; FMN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HSSP; P07740; 1LUC
                                           -!- SUBUNIT: HETERODIMER OF AN ALPHA AND A BETA CHAIN
                                                                                                                                                                                                                                                                                                                 *Nucleotide sequence
                                                                                                                                                                                                                                                                                                                                                   MEDLINE-89041570;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR002103; Bac_luciferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GLPMVLSWIITTSEKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GLPALISWIKXXXXRK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  40
                                                                                                                                                                                                                                                                                             Res.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>۸</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                    Protopopova
                                                                                                                                                                                                                                                                                                                                      Protopopova
                                                                                                                                                                                                                                     PubMed=3382442;
Protopopova M.V.,
                                                                                                                                                                                                                                                                                                                                                   PubMed=3186447;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        111
                                                                                                                                                                                                                                                                                             16:9855-9855(1988)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       39364 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29.1%;
43.8%;
                                                                                                                                                                                                                                                                                                                  ō,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation update)
alpha chain (EC 1.14.14.3) (Bacterial luciferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
                                                                                                                                                                                                                                                                                                                  part of
                                                                                                                                                                                                                                                                                                                                                                                                                     gamma
                                                                 REACTION I + FMNH(2)
                                                                                                                                                                                                                                                                                                                                       M. V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY).
I -> IC (IN REF. 2).
LE -> TL (IN REF. 2).
360EC324EOA43BAO CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY).
REGION OF ACTIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGION OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                 Photobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                      subdivision; Vibrionaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                    Karginov V.A., Mertvetsov N.P.,
                                                                                                                                                                                                                                                                                                                                       Karginov V.A., Mertvetsov N.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        354
                                                                  + z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   рв
19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTIVE CENTER-1
                                                                 LUMINOUS BACTERIA
O(2) = RCOOH + FMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ζ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Monooxygenase;
                                                                                                                                                                                                            beta-subunits
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CENTER-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                  leiognathi lux
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (B)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (BY
                                                                  FMN +
                                                                                                  genes.";
                                                                                                                                                                                                                of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                  H(2)0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
```

European

Institute.

There are

ō

restrictions

```
Search completed: May 9, 2003, 16:16:18 
Job time: 14.2941 secs
                                                                 Ъ
                                                                                                                                                                                           Ouery Match 29.1%; Score 41; DB 1; Length 354; Best Local Similarity 43.8%; Pred. No. 19; Matches 7; Conservative 3; Mismatches 6; Indels
                                                                                                                                                                                                                                                                   EMBL; X08036; CAA30831.1; -.

PIR; S01697; S01697.

PIR; J00413; J00413.

PIR; S03369; S06399.

HSSP; P07740; IBRL.

InterPro; IPR002103; Bac_luciferase.

Pfam; PF002296; bac_luciferase; 1.

PRINTS; PR00089; LUCITERASE.

PROSITE; PS00494; BACTERIAL_UCIFERASE; 1.

Photoprotein; Luminescence; Oxidoreductase; Monooxygenase; Plavoprotein; FMN.
                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                          use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                         DOMAIN
                                                            186 GLPMVLSWIITTSEKK 201
                                                                                16 GLPALISWIKXXXXRK 31
                                                                                                                                                                                         354 AA; 40370 MW;
                                                                                                                                                                                                                         279
                                                                                                                                                                                                                                                         100
                                                                                                                                                                                                                         294
                                                                                                                                                                                                                                                         115
                                                                                                                                                                                    REGION OF ACTIVE CENTER-1 (BY SIMILARITY).
REGION OF ACTIVE CENTER-2 (BY SIMILARITY).
; 569F6EEB903C7B90 CRC64;
                                                                                                                          0;
                                                                                                                          Gaps
                                                                                                                          0;
```

THIS PAGE BLANK (USPTO)

```
Minimum
Maximum
                                                                                                                                                                                                                 Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Searched:
                                                                                                                                                                                                                                                                           Pred. No.
score grea
and is der
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
Bd
                                                                                                                                                                                                                  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                          No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, serived by analysis of the total score distribution.
                                                                4444444
                                                                                                                                                                                                                 Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SPTREMBL_21:*
1: sp_archea:*
2: sp_bacteria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           May 9, 2003, 16:10:40; Search time 26.0784 Seconds (without alignments) 300.240 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-851-422A-2
141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  671580 seqs, 206047115 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gapop 10.0 , Gapext 0.5
                                                                                                                                                               33.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                           sp_vertebrate:*
sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                                                               sp_phage:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                     sp_mammal:*
sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                                                          sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sp_invertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sp_human:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sp_fungi: *
                                                                                                                                                                                                                                                                                                                                                                                        sp_rodent:*
sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                 sp_plant:*
                                                   67
2159
2159
197
320
357
357
357
358
101
357
                                                                                                                                                                                                                  DВ
                                                                                                                                        16
10
10
                                                                                       11
 1 Q9CTZ3
062903
7 Q8TNG7
018105
6 Q9RY43
6 Q9A7G7
6 Q98K31
6 Q98KX6
                                                                                                  Q95Z19
) Q8RVL1
) Q8RUQ1
5 Q8ZHF4
5 Q983X4
Q31016
Q31013
Q31012
                                                                                                                                                                                                                  IJ
                                                                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           671580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               38
062903 saguinus oe
Q8tng7 methanosarc
018105 caenorhabdi
09ry43 deinococcus
Q9a797 caulobacter
098k31 rhizobium 1
09rxx6 deinococcus
                                                                                                O95z19 polistes sp
O8rv11 zea mays (m
O8ruq1 zea mays (m
Q8zhf4 yersinia pe
O983x4 rhizobium 1
O31013 saguinus fu
O31012 saguinus fu
                                                                                                                                                                                                                 Description
                                                                                       Q9ctz3 mus musculu
```

Ųi	**	w	~	_	Ü	v	w	7	01	01	_	w	.~		0	Ψ	w	7	0,	01		~			_	•	Ψ.	•
41	42	42	42	42	42	42	42	42	42	42.5	42.5	42.5	42.5	43	4 3	43	43	43	43	43	43	43	43	43	4 3	43	43	4 ω
29.1	•		•	•	•	•		29.8	•	30.1	30.1	30.1	30.1					•	30.5			•		•		•	•	30.5
132	9507	1269	667	478	425	425	262	250	239	1105	590	357	330	850	744	658	462	440	428	425	307	289	283	276	270	261	240	174
N	N	10	ψ	16	11	11	17	10	16			N	δ		φ	Ģ	16	N	ഗ	4	10	10	16	10	10	10	13	16
Q9KI29	Q9EWA1	Q9FMF9	Q93839	Q9HUZ2	Q64602	8MAM6Ö	097077	Q8RZS6	Q927J3	Q55756	Q93E16	052098	Q49985	Q9Y137	Q8Y4H8	Q9VN12	Q8X845	Q93LM6	Q8SXA2	Q9UL02	Q9SPI1	Q9SP12	032970	Q9SP15	09SPI4	Q9SPI3	Q9DDR8	Q97RS0
Q9ki29 edwardsiell	Q9ewal streptomyce	Q9fmf9 arabidopsis	O	Q9huz2 pseudomonas	Q64602 r kynurenin	Q9wvm8 mus musculu				Q55756 synechocyst		ਰ	UЛ	Q.	8	Q9vn12 drosophila	G	Q931m6 nostoc punc		Q9u102 homo sapien			O32970 mycobacteri	-		arabic	dr8	. Q97rs0 streptococc

ALIGNMENTS

												•				٠.					
													_	_							
RESULT Q8RVL1 ID Q	ОУ	Ma Be	QS	T X	3 73 5	D D	2 Z	RA	RP	R	2 8	38	8	SO	OZ.	7 5	3	TT	AC	ID Q	RESULT
RESULT 2 Q8RVL1 ID Q8RVL1 AC Q8RVL1;	1 GIGAVLI 41 GIGAVLI	Query Match Best Local Similaritỳ Matches 26; Conser	SEQUENCE	CHAIN	Pfam; PF013	EMBL; AJ314	Institute o	Le H.Q.;	SEQUENCE FROM N.A	11	NCBI_TaxID=30210;	Pterygota;	Eukaryota;	Polistes sp	MELITTIN.	MO1-1++15 DX	01-DEC-2001	01-DEC-2001	Q95219;	Q95Z19	LT 1
PRELIMINARY;	GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXROO GIGAVLKVLTTGLPALISWIKRKROO	66.0%; ilarity 68.4%; Conservative	67 AA; 7502 MW;	3	Pfam; PF01372; Melittin; 1.	<pre>InterPro: IPR002116: Melittin.</pre>	Institute of Biotechnology, Hanoi,		OM N.A.	٠			Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;	Polistes sp. (Golden paper wasp).	Orein.	(Tremburel, 21	•			PRELIMINARY;	
PRT; 21	SWIKXXXXRKXX	0; Mismatches		-		. ·					POLISCINGE; POLISCES.	Endopterygota; Hymenoptera; Apocrita; Aculeata;	poda; Trache	wasp).		, Last	Last	, Created)	į	PRT;	
2159 AA.	XXRQQ 38 RQQ 66	DB 5; 4.2e-08; ches 0	94821CFF0E4EE9CF CRC64;	PROTEIN.			, Viet Nam.				res.	menoptera;	ata; Hexapo			annotation update)	nce update)			67 AA.	
		Length 67;; Indels 1	54;				уготоду,					Apocrita; A	ia; Insecta			3)					
		12; Gaps										culeata;	-								
		ω																			

```
Q8ZHF4
ID Q
AC Q
                                                                                        ş
                                 RESULT 4
                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SORRET TANA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query
Best L
                                                                                                                Matches
                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                           08RUQ1
08RUQ1;
01-JUN-2002
01-JUN-2002
01-JUN-2002
Q8ZHF4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JUN-2002 (
01-JUN-2002 (
01-JUN-2002 (
Calpain-like
                                                                                                                                                                                                       Lid S.E., Grais D., Jung R., Lorentzen J.A., Ananiev E., Chamberlin M., Niu X., Meeley R., Nichols S., Olsen O.A.; "The defective kernel I (dekl) gene required for aleurone cell development in the endosperm of malze grains encodes a membran development in the endosperm of malze grains encodes a membran
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein of the calpain gene superfamily.";
Proc. Natl. Acad. Sci. U.S.A. 99:5460-5465(2002).
EMBL; AY061806; AAL38189.1;
SEQUENCE 2159 AA; 238997 MW: GROCE----
                                                                                                                                                           protein of the calpain gene superfamily.";

proc. Natl. Acad. Scl. U.S.A. 99:5460-5465(2002).

EMBL; AYO61804; AAL138187.1; -.

EMBL; AYO61805; AAL38188.1; -.

EMBL; AYO61805; AAL38188.1; -.
                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN-CV. MO17; TISSUE-DEVELOPING ENDOSPERM;
PubMed-11929961;
                                                                                                                                                                                                                                                                                                                                   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Lillopsida; Poales; Poaceae; PACC clade;
                                                                                                                                                                                                                                                                                                                                                                                  Calpain-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chamberlin M., Niu X., Meeley R., Nichols S., "The defective kernel 1 (dek1) gene required development in the endosperm of maize grains
                                                                                                                                                                                                                                                                                                                                                           Zea mays (Maize)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PubMed=11929961;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-CV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. STRAIN-CV. B73; TI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=4577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Panicoideae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zea mays (Maize)
                                                                                                                                                                                                                                                                                                             NCBI_TaxID-4577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lid S.E., Gruis D.,
                                                                   821 LGWALSSTIAVITTGLIPIVAW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                w
                                                                                          N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 IGAVLKXXXXVLTTGLPALISW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Match
                                                                                        IGAVLKXXXXVLTTGLPALISW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LGWALSSTIAVITTGLIPIVAW
                                                                                                               Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                           (TrEMBLrel.
                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                  (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (TrEMBLrel.
            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                         Andropogoneae;
                                                                                                                                                                                                                                                                                                                                                                                protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Andropogoneae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE=DEVELOPING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Jung
                                                                                                                         33.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       33.38;
                                                                                                                                                                                                                                                                                                                                                                                           21, 21, 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21,
21,
21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R .
                                                                   842
                                                                                                                                                                                                                                                                                                                                                                                          Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                                                                                        23
                                                                                                              5
                                                                                                                                                                                                                                                                                                                          Zea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 47; DB
Pred. No. 79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lorentzen J.A., Ananiev
                                                                                                                           Pred.
                                                                                                                                     Score 47;
          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                             971C1A709BA5F5D4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ENDOSPERM
                                                                                                                           NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                          2159
            197
                                                                                                                                      DΒ
                                                                                                                                     10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d for aleurone cell
                                                                                                               9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                     Length 2159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 2159;
                                                                                                                                                             CRC64;
                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                     a membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       면
:
                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                              Gaps
                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

```
SOUR RESERVED TO SOURCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q983X4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-OCT-2001
01-OCT-2001
01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q983X4
Q983X4;
                                                                                                      "Complete genome structure of the nitrogen-fixing Mesorhizobium loti";
DNA Res. 7:331-338(2000).
EMBL; AP003013; BAB53756.1; -...
InterPro; IP8001296; Glycos_transf_1.
Pfam; PF00534; Glycos_transf_1; 1.
Hypothetical protein; Complete proteome.
                                                                                                                                                                                                                                                                                                 Kaneko T., Nakamura Y., Sato S., Asamizu E., Kato T., Sast Watanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno Mochizuki Y., Nakayama S., Nakazaki N., Shimpo S., Sugimot Takeuchi C., Yamada M., Tabata S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rhizobium loti (Mesorhizobium loti).
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;
Phyllobacteriaceae; Mesorhizobium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TIGRFAMS; TIGRO0042; Ham1p_like; 1.

Hypothetical protein; Complete proteome.

SEQUENCE 197 AA; 20906 MW; 153FE68245FDA639 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Parkhill J., Wren B.W., Thomson N.R., Titball R.W., Holden M.T.G., Prentice M.B., Sebaihia M., James K.D., Churcher C., Mungall K.L., Baker S., Basham D., Bentley S.D., Brooks K., Cerdeno-Tarraga A.M., Chillingworth T., Cronin A., Davies R.M., Davis P., Dougan G., Feltwell T., Hamlin N., Holroyd S., Jagels K., Karlyshev A.V., Leather S., Moule S., Oyston P.C.F., Quail M., Rutherford K., Simmonds M., Skelton J., Stevens K., Whitchead S., Barrell B.G., Simmonds M., Skelton J., Stevens K., Whitchead S., Barrell B.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Genome sequence of Yersinia pestis, the causative agent of plague.";
Nature 413:523-527(2001).
EMBL; AJ414145; CAC89788.1;
EMBL; AJ7414145; CAC89788.1;
InterPro: IPR002637; Hamlp_like.
Pfam; PF01725; Hamlp_like; 1.
ProDom; PD004952; Hamlp_like; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-MAR-2002 (TrEMBLrel.
01-MAR-2002 (TrEMBLrel.
01-JUN-2002 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. STRAIN-MAFF303099;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hypothetical protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hypothetical YP00945.
                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-21082930;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=381;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MLR8126.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-CO-92 / BIOVAR ORIENTALIS;
MEDLINE-21470413; PubMed-11586360;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=632;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yersinia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yersinia pestis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AVLKXXXXVLTTGLPAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AILKARHAAQTTGLPAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity 52.9
9; Conservative
                                                                                     32Ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel. 18, Created)
(TrEMBLrel. 18, Last sequence update)
(TrEMBLrel. 20, Last annotation update)
1 protein mlr8126.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein
                                                                                        Α
Α.
                                                                                                                                                                                                                                                                                                                                                                                                                                          PubMed=11214968;
                                                                                        36354 MW;
31.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             el. 20, Created)
el. 20, Last sequence up
el. 21, Last annotation
yp00945.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 45; DB Pred. No. 14; 2; Mismatches
                                                                                     proteome.
68E97778C3B15CA1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                                                                       Kato T., Sasam
ima K., Kimura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 197;
                                                                                                                                                                                                                                                                              symbiotic bacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                    Sugimoto M.,
                                                                                                                                                                                                                                                                                                                                                                                                                   Sasamoto
                                                                                                                                                                                                                                                                                                                                                                Α.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

Query Match Best Local S Matches 7

Similarity 7; Conserv

Conservative

2;

Mismatches

Score 45; Pred. No.

DВ 23;

16;

Length 320;

Indels

0

Gaps

Q

13

LTTGLPALISW

23

```
OC CON DEPT DAC
                                                                                                                                             Q3101
                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                             RESULT
Q31013 PRELIMINARY; PRT; 357 AA.

Q31013; O1-NOV-1996 (TrEMBLrel. 01, Created)

T 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)

T 01-UN-2002 (TrEMBLrel. 21, Last annotation update)

T 01-UN-2002 (TrEMBLrel. 21, Last annotation update)

MHC CLASS I Safu-G*02 (Fragment).

N MHC CLASS I SAFU-G.

S Saguinus fuscicollis (Brown-headed tamarin).

C Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; EuCharyota; Metazoa; Primates; Platyrrhini; Callitrichi
                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q31016;
Q31016;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Watkins D.I., Garber T.L.;
Submitted (FEB-1996) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: INVOLVED IN THE PRESENTATION OF FOREIGN ANTIGENS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
MHC class I antigen SO-16 (Fragment).
                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                    Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                 PRINTS; PR01638; MHCCLASSI.
ProDom; PD000050; MHC_I; 1.
SMART; SM00407; IGc1; 1.
PROSITE; PS00290; IG_MHC; 1
                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF00047; ig; 1. Pfam; PF00129; MHC_I; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR003597; Ig_c1.
InterPro; IPR003006; Ig_MHC.
InterPro; IPR001039; MHC_I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; U49331; AAA92140.1; -. HSSP; P30685; 1A9B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Unusually limited nucleotide sequence major histocompatibility complex class species (Saguinus oedipus).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
MEDLINE-91153864; PubMed-1840570;
Carhor T.L., Chen Z.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Saguinus oedipus (Cotton-top tamarin).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae; Saguin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MHC class I antig
Saguinus oedipus
                                                                                                                                                                                                                                                                                                                            NON_TER
                                                                                                                                                                                                                                                                                                                                      NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=9490;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Immunogenetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Letvin N.L.;
                                                                                                                                                                                                   302 GIVAILAILGAVVTGAVVAAVMWRKKSSDKKGGSYSQ 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 103
                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                          1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IMMUNE SYSTEM (BY SIMILARITY).
SUBUNIT: DIMER OF ALPHA CHAIN AND A BETA CHAIN (BETA-2-MICROGLOBULIN) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LTTGMPRLLGW 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FROM
                                                                                                                                                                                                                                                                                                            357
357 AA;
                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N.A.
                                                                                                                                                                                                                                                                                                                                                     Transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               33:79-89(1991).
                                                                                                                                                                                                                                                                                                                          357
                                                                                                                                                                                                                                                                                                              39969 MW;
                                                                                                                                                                                                                                                                   31.9%;
                                                                                                                                                                                                                                                     Score 45; DB Pred. No. 26; S; Mismatches
                                                                                                                                                                                                                                                        5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                            E7075EFF2BEA6A23 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Toukatly G.,
                                                                                                                                                                                                                                                                     DB 7;
26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       variation of
I genes of a
        Vertebrata; Euteleostomi;
ni; Callitrichidae; Saguin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA
                                                                                                                                                                                                                             37
                                                                                                                                                                                                                                                        21;
                                                                                                                                                                                                                                                                                Length 357;
                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hughes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the
New
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       expressed
World primate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A.L.,
        Saguinus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Saguinus.
                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TO
                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            THE
                                                                                                                                                                                                                                                        0
```

```
RESULT
Q31012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 11; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam: PF00047; ig; 1.
Pfam: PF00129; MHC_I; 1.
PRINTS: PR01638; MHCCLASSI.
ProDom: PD000050; MHC_I; 1.
SMART; SM00407; IGC1; 1.
                                                                                                                                                                                                                                                                                                                                                                              Q31012
Q31012;
Q1-NOV-1996
Q1-NOV-1996
Q1-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-98070787; PubMed-9405648; MEDLINE-98070787; PubMed-9405648; Cadavid L.F., Shufflebotham C., Ru Watkins D.I.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; U59634; AAB97477.1; LSP; 059535; 1HHK.
                     PRINTS; PR01638; MHCCLASSI.
ProDom; PD000050; MHC_I; 1.
SMART; SM00407; IGc1; 1.
                                                                                                             EMBL; U59633; AAB97476.1; -. HSSP; Q95352; 1HHK. Interpro Trace--
                                                                                                                                                                                       Proc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Glycoprotein;
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Evolutionary instability of the major histocompat class I loci in new world primates."; Proc. Natl. Acad. Sci. U.S.A. 94:14536-14541(1997)
                                                           Pfam; PF00047; ig; 1. Pfam; PF00129; MHC_I; 1.
                                                                                                                                                                                                              "Evolutionary instability of the major class I loci in new world primates.";
                                                                                                                                                                                                                                       Cadavid L.F., Watkins D.I.;
                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
MEDLINE=98070787; J
                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae; Saguin
                                                                                                                                                                                                                                                                                                                                        Saguinus fuscicollis (Brown-headed tamarin).
                                                                                                                                                                                                                                                                                                                                                      MHC class I
MHC SAFU-G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IMMUNE SYSTEM (BY SIMILARITY).
-!- SUBUNIT: DIMER OF ALPHA CHAIN AND A BETA CHAIN (BETA-2-MICROGLOBULIN) (BY SIMILARITY).
                                                                                  InterPro; IPR003597; Ig_c1.
InterPro; IPR003006; Ig_MHC
InterPro; IPR001039; MHC_I.
                                                                                                                                                            IMMUNE SYSTEM (BY SIMILARITY).
-!- SUBUNIT: DIMER OF ALPHA CHAIN AND A BETA CHAIN (BETA-2-
                                                                                                                                                                                                                                                                                                   NCBI_TaxID-9487;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR003597; Ig_cl.
InterPro; IPR003006; Ig_MHC.
InterPro; IPR001039; MHC_I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            [1]
SEQUENCE FROM
           PROSITE; PS00290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE; PS00290; IG_MHC; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -! - FUNCTION:
                                                                                                           (nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                302 GIVAILAILGAVVTGAVVAAVMWRKKSSDKKGGSYSQ 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                         æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQ
                                                                                                                                                                                   ss I loci in new world primates.";
c. Natl. Acad. Sci. U.S.A. 94:14536-14541(1997).
FUNCTION: INVOLVED IN THE PRESENTATION OF FOREIGN ANTIGENS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   357 AA;
                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel.'01, Created)
(TrEMBLrel. 01, Last sequence update)
(TrEMBLrel. 21, Last annotation update)
Safu-G*01 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                   Shufflebotham C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Transmembrane.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INVOLVED IN THE PRESENTATION
                                                                                                                                                                                                                                                                PubMed-9405648;
           IG_MHC; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   40347 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31.9%;
29.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 45;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDBA0A14B127F25D CRC64;
                                                                                                                                                                                                                                                   Ruiz F.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ruiz F.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                  358
                                                                                                                                                                                                                          histocompatibility
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        histocompatibility
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OF,
                                                                                                                                                                                                                                                   Yeager M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yeager M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FOREIGN ANTIGENS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                  Hughes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hughes A.L.,
                                                                                                                                                                                                                           complex
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complex
                                                                                                                                                                                                                                                                                                                Saguinus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0:
                                                                                                                                                                                       7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                       THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

Transmembrane

```
RESULT
062903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OCC COLOR OCC CO
  SEPPER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SQ
                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RA Arbawa T. Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,

RA Alzawa T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,

RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,

RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,

RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,

RA Kuchi P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

RA Kuchi P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,

RA Schrimi L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,

RA Schrimi L.M., Staubli F., Suzuki R., Tomita M., Wagner L.,

RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,

RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,

RA Biake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,

RA Brownstein M.J., Bult C., Fletcher C., Fujita M., Gariboldi M.,

RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,

RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,

RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,

RA Sasaki H., Sato K., Schoenbach C., Seya T., Shbata Y., Storch K.-F.,

RA Suzuki H., Toyo-oka K., Wang K.H., Weitz C., Whittaker C., Wilming L.,

RA Havsahizaki Y., Storbida K., Hasegawa Y., Kawaji H., Kohtsuki S.,

RA Havsahizaki Y.
                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NON_TER .
                                                 O62903;
01-AUG-1998 (TrEMBLrel. 07,
01-AUG-1998 (TrEMBLrel. 07,
01-JUN-2002 (TrEMBLrel. 21,
MHC
MHC
                                                                                                                                                             062903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. STRAIN-C57BL/6J; TISSUE-STOMACH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Adult male stomach cDNA, clone:2210020H01, full in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Adult male stomach cDNA, RIKEN full-length enriched
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9CTZ3;
01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9CTZ3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-21085660;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nature 409:685-690(2001).
EMBL; AK019054; BAB31527.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID-10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RGS11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'Functional annotation of a full-length mouse cDNA collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 303
                                                                                                                                                                                                                 10
                                                                                                                                                                                                                                                                                              4
                                                                                                                                                                                                                                                                                                                       12 VLTTGLPALISWI
                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
les 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
CLASS
                                                                                                                                                                                                                                                                                              VLTTGLPVLIGOV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MGI:1354739;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GIVAILAILGAVVTGAVVAAVMWRKKSSDKKGGSYSQ 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1085660; PubMed-11217851; Shinagawa A., Shinata K., Yoshino M., Itoh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             358 AA;
                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rgs11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  full insert sequence
                                                                                                                                                                                                                                                                                                                                                24
                        (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10731 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             40074 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                31.2%;
                                                 Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5;
                                                                                                                                                                                                                                                                                                                                                                                                 Score 44; DB
Pred. No. 10;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                    <u>;</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 45;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; I
Sciurognathi; Muridae;
                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             853BC46261EC1101 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          02F89E79C54ECA5E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                               357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ⋛
                                                                                                                                                             ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21;
                                                                                                                                                                                                                                                                                                                                                                                                    س
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 101;
                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Euteleostomi;
; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R . . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
Q8TNG7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                             Galagan J.E., Nusbaum C., Roy A., Endrizzi M.G., Macdonald P., FitzHugh W., Calvo S., Engels R., Smirnov S., Atnoor D., Brown A., Allen N., Naylor J., Stange-Thomann N., DeArellano K., Johnson R., Linton L., McEwan P., McKernan K., Talamas J., Tirrell A., Ye W., Zimmer A., Barber R.D., Cann I., Graham D.E., Grahame D.A., Guss / Hedderich R., Ingram-Smith C., Kuettner H.C., Krzycki J.A., Li W., Liu J., Mukhopadhyay B., Reeve J.N., Smith K., Springer T.A., Umayam L.A., White O., White R.H., de Macario E.C., Springer T.A., Umayam L.A., White O., White R.H., de Macario E.C., Ferry J.G., Jarrell K.F., Jing H., Macario A.J.L., Paulsen I., Parishett J., Grand F., Grand F., Paulsen I., Call C., 
                                     and physiological diversity." Genome Res. 12:532-542(2002). EMBL; AE010920; AAM05711.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Archaea; Euryarchaeota; Methanococo
Methanosarcinaceae; Methanosarcina
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JUN-2002
01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q8TNG7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Glycoprotein;
NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRINTS: PR01638; MHCCLASSI.
ProDom; PD000050; MHC_1; 1.
SMART; SM00407; IGC1; 1.
PROSITE: PS00290; IG_MHC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00047; 19;
Pfam; PF00129; MHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MICROGLOBULIN) (BY SIMI)
EMBL; AF058916; AAC14422.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A. Evans D.T., Knapp L.I "Three Different MHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Saguinus oedipus (Cotton-top tamarin).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae; Saguin
Complete proteome SEQUENCE 457 AA
                                                                                                                            Pritchett M., Metcalf W.W.,
                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=21929760;
                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-C2A
                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QBTNG7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSSP; P30685;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <del>-</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Diversity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the Influenza Virus in a Primate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9490;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Methanosarcina acetivorans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Metallo-beta-lactamase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro;
                                                                                                   The genome of Methanosarcina acetivorans reveals extensive metabolic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              302 GIVAILAILGVVVTGAVVAAVMWRKKSSDKKGGSYSQ 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GIGAVLKXXXXVLTTGLPALISWIKXXXXRKXXXXRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IMMUNE SYSTEM (BY SIMILARITY).
SUBUNIT: DIMER OF ALPHA CHAIN AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nitted (APR-1998) to the EMBL/GenBank/DDBJ FUNCTION: INVOLVED IN THE PRESENTATION OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IPR003597; ig_cl.
IPR003006; Ig_MHC.
IPR001039; MHC_I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                357 AA; 39996 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                              Birren B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1A9B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Transmembrane
                                                                                                                                              Sowers K.R.,
  8
                                                                                                                                                                                                                                                                                                                                                                 35395 / DSM 2834;
PubMed-11932238;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                '.:
1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Α.,
  51337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31.2%;
29.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A., Jing P., Hinshaw V.S., Watkins D.I.;
Class I Molecules Bind the Same CTL Epitope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21,
21,
21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Methanococci;
MW;
                                                                                                                                                  Swanson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Çī
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              808BEC8471A3E841 CRC64;
8A54105BCB23F275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Species with Limited MHC
                                                                                                                                                Macario A.J.L., R.V., Zinder S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Methanosarcinales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A BETA CHAIN (BETA-2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۶
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             databases.
FOREIGN ANTIGENS TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 357;
  CRC64;
                                                                                                                                                  Ξ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                  Lander
                                                                                                                                                                                                                                                      .A., Guss A.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Class
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Saguinus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                              .
R:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
RESULT
Q9RY43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 018105
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A DE REPRESENTATION OF THE PROPERTY OF THE PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               018105
018105;
                                                                                                                                                                                                                                                                                                                                                                                             Q9RY43
Q9RY43;
              MEDLINE=20036896; PubMed=10567266;
White O., Eisen J.A., Heidelberg J.F., Hickey E.K., Peterson J.D., Dodson R.J., Haft D.H., Gwinn M.L., Nelson W.C., Richardson D.L., Moffat K.S., Qin H., Jiang L., Pamphile W., Crosby M., Shen M., Yamathevan J.J., Lam P., McDonald L., Utterback T., Zalewski C., Makarova K.S., Aravind L., Daly M.J., Minton K.W., Fleischmann R.D. Ketchum K.A., Nelson K.E., Salzberg S., Smith H.O., Venter J.C.,
                                                                                                                                                                                                                                                                                                                                      01-MAY-2000
01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        investigating biology.";
Science 282:2012-2018(1998).
EMBL; Z81124; CAB03377.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Smye
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Caenorhabditis elegans.
Eukaryota; Metazoa; Nemato
Rhabditidae; Peloderinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  T21B4.10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                T21B4.10 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JAN-1998 (TrEMBLrel.
01-JAN-1998 (TrEMBLrel.
01-MAR-2002 (TrEMBLrel.
                                                                                                                                                                                                                                                                                              Hypothetical DR0108.
                                                                                                                                                                                                                                                                                                                                                                               01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=99069613; PubMed=9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=6239;
                                                                                                                                                    STRAIN-R1;
                                                                                                                                                                                                                  NCBI_TaxID=1299;
                                                                                                                                                                                                                                                       Bacteria;
                                                                                                                                                                                                                                                                              Deinococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR003003; 7TM_chemo2.
InterPro; IPR000168; 7TM_nematode.
Pfam; PF01604; 7tm_5; 2.
                                                                                                                                                                                                                                       Deinococcaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           none;
                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Genome sequence of the nematode
                                                                                                                                                                                                                                                                                                                                                                                                                                                         13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GALIKGSYSIWLEGLPSFAGWM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAVLKXXXXVLTTGLPALISWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IGAVLKXXXXVLTTGLPALISW 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IGIVLQTYSPILLVGLTLVASW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9; Conserv
                                                                                                                                                                                                                                                       Thermus/Deinococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (OCT-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                    (TrEMBLrel.) (TrEMBLrel.) (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                714 AA;
                                                                                                                                                                                                                                                                        radiodurans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
.
                                                                                                                                                                                                                                       Deinococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nematoda;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81848 MW;
                                                                                                                                                                                                                                                                                                               el. 13,
el. 13,
el. 21,
DR0108.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20,05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      oda; Chromadorea;
Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     259
                                                                                                                                                                                                                                                                                                                                    Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               w
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                     group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C3A1E2C1DF4FDBCE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C.elegans:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   714
                                                                                                                                                                                                                                                         Deinococci;
                                                                                                                                                                                                                                                                                                                                                                                                                    749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DВ
79;
                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rhabditida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    platform
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 714;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 457;
                                                                                                                                                                                                                                                         Deinococcales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rhabditoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
```

RESULT Q98K31 ID Q9 AC Q9 DT 01

Q98K31; Q98K31; 01-OCT-2001

(TrEMBLrel.

18,

PRELIMINARY;

PRT;

```
RESULT
Q9A7G7
                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RT RT DR DR DR DR DR DR DR SQ
g
                    QV
                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9A7G7
Q9A7G7;
Q1-JUN-2001
01-JUN-2001
01-MAR-2002
                                                                                                                                                                                                               Nierman W.C., Feldblyum T.V., Laub M.T., Paulsen I.T., Nelson Eisen J., Heidelberg J.F., Alley M.R.K., Ohta N., Maddock J.R. Potocka I., Nelson W.C., Newton A., Stephens C., Phadke N.D., DeBoy R.T., Dodson R.J., Durkin A.S., Gwinn M.L., Haft D.H., Kolonay J.F., Smit J., Craven M.B., Khouri H., Shetty J., Ber Utterback T., Tran K., Wolf A., Wanatheyan J., Ermolaeva M., Salzberg S.L., Venter J.C., Shapiro L., Fraser C.M.; "Complete genome sequence of Caulobacter crescentus."; "Proc. Natl. Acad. Sci. U.S.A. 98:4136-4141(2001).
                                                                                                                       Pfam; PF00933; Glyco_hydro_3; 1.
Pfam; PF01915; Glyco_hydro_3_C; 1.
PRINTS; PR00133; GLHYDRLASE3.
                                                                                                                                                                                             EMBL; AE005849; AAK23732.1; -. TIGR; CC1756; -.
                                                                                                                                                                                                                                                                                                                                                                                                     Caulobacter crescentus
                                                                                                                                                                                                                                                                                                                                                                                                                  Beta-D-glucosidase CC1756.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE; PS50156; SSD; 1.
Hypothetical protein: Complete proteome.
SEQUENCE 749 AA; 79149 MW; 27947FDDF9D144E5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Science 286:1571-1577(1999)
EMBL; AE001873; AAF09696.1;
TIGR; DR0108; -.
                                                                                                   PROSITE: PS00436; PEROXIDASE_2; UNKNOWN_1 Complete proteome.
                                                                                                                                                                                                                                                                                                                       MEDLINE=21173698; PubMed=11259647;
                                                                                                                                                                                                                                                                                                                                    STRAIN-ATCC
                                                                                                                                                                                                                                                                                                                                                                                 Caulobacter
                                                                                                                                                                                                                                                                                                                                                                                             Bacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Genome sequence of the radioresistant radiodurans Rl.";
                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN-ATCC 19089 / CB15;
                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=155892;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR004869;
Pfam; PF03176; MMPL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR000731; HMGCR/patch_5TM
                                                                                                                                                             InterPro;
                                                                                                                                                                         InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              315
516
                                                                                                                                                                                  [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14
                     N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GIGAVLKXXXXVLT - - TGLPALIS
                     IGAVLKXXXXVLTTGLPALISWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GIGGVLAVVLTVLASLTALPALLT
VSAANKNAVVVLETGGPVLMPWL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         l Similarity 50.0
12; Conservative
                                           9; Conserv
                                                                                        proteome.
762 AA;
                                                                                                                                                        IPR002772; GH_3C.
IPR001764; GH_3N.
IPR002016; Peroxidase.
                                                                                                                                                                                                                                                                                                                                                                                          Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel.
                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                        AA;
                                                                                        81011 MW;
                                                     31.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MMPL.
                                                                                                                                                                                                                                                                                                                                                                                                                                       17,
17,
20,
                                                                                                                                                                                                                                                                                                                                                                                          alpha
                                         ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ν,
                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 44;
Pred. No.
                                                       Score
Pred.
                    24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22
                                                                                        CA1CC76B0D7E02DB
                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                          subdivision; Caulobacter group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                       NO.
                                                                44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      762
                                                       85;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bacterium Deinococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DВ
                                                                 DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      À
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16; Length 749,
                                                                16;
                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
                                                                                        CRC64;
                                                                Length
                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                 762;
                                                                                                                                                                                                                                                                                                 Nelson K.E.,
                                                                                                                                                                                                                                                                                     N.D.
                                                                                                                                                                                                                                                                 Berry
                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2
                                                                                                                                                                                                                                                     White
                                                                                                                                                                                                                                                                                      Ely B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1,
                                            0;
```

```
В
                                        ş
                                                                                                                                                              P SEQUENCE FROM N.A.

(C STRAIN-MAFF303099)

(X MEDLINE-21082930; PubMed-11214968;

(X A KANEKO T., NAKAMURA Y., Sato S., ASAMIZU E., KATO T., SASAMOTO S.,

(X KANEKO T., NAKAMURA Y., SATO S., ASAMIZU E., KATO T., SASAMOTO S.,

(X MATANABA A., Idesawa K., Ishikawa A., Kawashima K., Kimura T.,

(X Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno A.,

(X Mochizuki Y., Nakayama S., Nakazaki N., Shimpo S., Sugimoto M.,

(X Takeuchi C., Yamada M., Tabata S.;

(**Tomplete genome structure of the nitrogen-fixing symbiotic bacterium Mesorhizobium loti.";

DNA Res. 7:331-338(2000)

DNA Res. 7:331-338(2000)

BEMBL: AP002998; BAB48983.1;

EMBL: AP002998; BAB488983.1;

SEQUENCE 2078 AA; 207618 MW; BBE57E48BBA59B48 CRC64;
                                                                                 Ouery Match 31.2%; Score 44; DB 16; Length 2078; Best Local Similarity 47.6%; Pred. No. 2.4e+02; Matches 10; Conservative 1; Mismatches 10; Indels
1627 GAGLGLKGGGTYTTAGTPALV 1647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-OCT-2001 (TrEMBLrel. 18, Last sequence update) 01-MAR-2002 (TrEMBLrel. 20, Last annotation update) Hypothetical protein mll1661.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rhizobium loti (Mesorhizobium loti).
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;
Phyllobacteriaceae; Mesorhizobium.
NCBI_TaxID-381;
                                      1 GIGAVLKXXXXVLTTGLPALI 21
                                                                                 0; Gaps
                                                                                   0;
```

Search completed: May 9, 2003, 16:17:36 Job time: 28.0784 secs

Copyright

GenCore version 5.1.4_p5_4578 (c) 1993 - 2003 Compugen Ltd.

Ţ

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          on:
                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by score greater than or equal to the score of the
         115.5
                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                           is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A_Geneseq_101002:*

1: /SIDS2/gcgdata/g.
2: /SIDS2/gcgdata/g.
3: /SIDS2/gcgdata/g.
4: /SIDS2/gcgdata/g.
4: /SIDS2/gcgdata/g.
5: /SIDS2/gcgdata/g.
6: /SIDS2/gcgdata/g.
6: /SIDS2/gcgdata/g.
7: /SIDS2/gcgdata/g.
8: /SIDS2/gcgdata/g.
9: /SIDS2/gcgdata/g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length:
                                                                                                                                                                                                                                                          Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          мау
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              908470 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10:
12:
13:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-851-422A-8
128
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1980 DAT: *
2: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1981 DAT: *
3: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1982 DAT: *
4: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1983 DAT: *
4: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1983 DAT: *
5: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1985 DAT: *
5: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1987 DAT: *
6: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1986 DAT: *
7: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1987 DAT: *
6: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1987 DAT: *
6: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1989 DAT: *
7: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1990 DAT: *
7: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1990 DAT: *
7: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1991 DAT: *
7: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1991 DAT: *
7: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1993 DAT: *
7: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1995 DAT: *
7: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1996 DAT: *
7: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1999 DAT: *
7: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1990 DAT: *
7: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1990 DAT: *
7: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2000 DAT: *
7: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2000 DAT: *
7: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2000 DAT: *
         GFIATLCTKVLDFGIDKLIQLIEDKXX 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9, 2003, 16:07:45; Search time 38.1176 Seconds
         222662555
                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                133250620 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gapext 0.5
                                                                                                                                                                                                                                                            Ð
                        AAO21730
AAO21739
AAOE18192
AAEE18197
AAO21737
AAO21738
AAEE18200
AAO21736
AAEE18200
                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (without alignments)
94.386 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                           chance to have result being pr
Procytotoxin cytol
Procytotoxin #1 for tr
Procytotoxin #3 for
Procytotoxin #3 for
Procytotoxin #3 for
Protoxin #2 for tr
                                                                                                                                                                                                                                                       Description
                                                                                                                                      Procytotoxin cytol
Entamoeba histolyt
Procytotoxin #1 fo
                                                                                                                                                                                                         Amoebapore helix 3
                                                                                                                                                                                                                                                                                                                                                                                              printed,
```

o.	46	6	6	60	7					7		7	7	7	7	7	œ	8	u	9	9	0	w	4	4	4	4	4	4	4	.5	1.5	1.5	1.5
	35.9	5	5	5	σ.	σ.	5	6	σ,	9		σ.	σ.	6	5	6.	7.	7.	7.	8	8	9			2			2	2		7.	87.1	7.	87.1
į.	828	æ	9	ω	ω	0	-	7	7	7	7	7	7	7	7	N	w	Ν	\sim	7	0	w	0	ū	459	442	4	2	\vdash			26		
22	23	23	21	19	23	23	23	21	21	21	21	21	21	21	21	22	23	21	18	23	21	22	21	21	21	21	21	23	21	21	23	23	23	23,
6748	B918	316	2541	W9836	32	365	48	094	94	094	094	94	93	93	93	76	9364	469	099	817	2517	6932	4448	5271	0627	5271	G0627	9298	5272	0627	E182	E1820	18	AA021741
Drosophila melanog	lly a	idopsis trans	us radiata c	ori GHPC	icidally	rbicidal	ally	or MAP	ťr	aethio	chagasi MAP-k	donovani MAP-	infantum	amazonensis M	mexicana	ania	Herbicidally activ	isseria	pylor	phyloco	Eucalyptus grandis	osophi	-zoster	bidopsis	bidopsis	bidopsis	abidopsis tha	bicidally	bidopsis	thali	cytotoxin #5 f	rocytolytic p	olytic peptid	Procytotoxin cytol

ALIGNMENTS

RESULT 1
AAO21730
ID AAO2
XX
AC AAO2
XX

AAO21730 standard; Peptide; 25 AA

AA021730;

Amoebapore helix 3 cytolytic peptide

13-SEP-2002 (first entry)

Cytotoxic; cytostatic; procytotoxin; inactivator; protease; cancer; ovary; prostate; breast; skin; lung; pancreas; Amoebapore helix 3. US2002045736-A1 WPI; 2002-507251/54. Yu X, (YUXX/) YU X. (WAGN/) WAGNER T 09-MAY-2001; 2001US-0851422 27-AUG-2001; 2001US-0938623 Entamoeba histolytica. 18-APR-2002. Wagner TE;

A new procytotoxin useful in the treatment of cancer of e.g. prostate, ovary, breast, or skin, has a cytotoxic peptide bound to an inactivator via a peptide bond cleavable by a specific protease .

```
xgx000000xgx
xxx000000x
          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to a procytotoxin comprising a cytotoxic peptide bound to an inactivator via a peptide bond, where the peptide bond is susceptible to cleavage by a targeting specific protease. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, breast, skin, lung or pancreas. This sequence represents the Amoebapore helix 3 cytolytic peptide relating to the invention.
                                                                                                             Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Key
Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cytotoxic; cytostatic; procytotoxin; inactivator; protease; cancer; ovary; prostate; breast; skin; lung; pancreas; cytolytic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Procytotoxin cytolytic peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA021739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAO21739 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>...</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GFIATLCTKVLDFGIDKLIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GFIATLCTKVLDFGIDKLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Page 3; 21pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                independently selected from the group consisting of the epsilon-amino group of the adjacent lysine residue, [epsilon-amino group of the adjacent lysine residue, [epsilon-apamma]-Glu, [epsilon gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-gamma]-Glu-[alpha-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       independently selected from the group consisting of the epsilon-amino group of the adjacent lysine residue, [epsilon-gamma]-Glu, [epsilon-gamma]-Glu-[epsilon-alpha]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alpha-gamma]-(I)-[alph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
independently selected epsilon-amino group of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         epsilon amino aci of the indicated 17
/note= "This Lys residue is modified by R, where R is independently selected from the group consisting of the adjacent lysine residue,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note= "This Lys residue is modified by R, where independently selected from the group consisting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            note= "This Lys residue is modified by R, where
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98.4%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 126; DB 23; pred. No. 6.1e-13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   #4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                              amino
                                                                                                                                          acid"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of the
                                        the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

ÿ

09-MAY-2001; 2001WO-US40690

```
RESULT 3
AAE18192
                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to a procytotoxin comprising a cytotoxic pept bound to an inactivator via a peptide bond, where the peptide bond susceptible to cleavage by a targeting specific protease. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, breast, skin, lung or pancreas. This sequence represents a procytotoxin cytolytic peptide sequence relating to the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A new procytotoxin useful in the treatment of cancer of e.g. prostate, ovary, breast, or skin, has a cytotoxic peptide bound to an inactivator via a peptide bond cleavable by a specific protease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (YUXX/)
                                                                                                                                                                                                   07-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09-MAY-2001;
                                                                     WO200185777-A2
                                                                                              Entamoeba histolytica
                                                                                                                                           Procytotoxin;
                                                                                                                                                                     Entamoeba histolytica procytotoxin, amoebapore helix
                                                                                                                                                                                                                                                           AAE18192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Page 7; 21pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2002-507251/54.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Yu X,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-AUG-2001; 2001US-0938623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US2002045736-A1
                                                                                                                                                                                                                                                                                                                                                                                        y Match 98.4%;
Local Similarity 100.0%;
hes 25; Conservative (
                                                                                                                                                                                                                                                                                                                                WAGNER T
                                                                                                                                                                                                                                                           standard;
                                                                                                                           ovary; lung;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                [epsilon-gamma]-Glu, [epsilon-gamma]-Glu-[alpha-gamma]-Glu)-3, [epsilon-alpha]-(TPr)]-3, [epsilon-alpha]-(TPr)]-3, [epsilon-alpha]-(TPr)]-3, [epsilon-alpha]-(TPr)]-3, [epsilon-alpha]-(TP)]-3, [epsilon-alpha]-(Arg)]-3, wherein [epsilon-gamma] represents a peptide bond between the epsilon-amino group of lysine and the gamma carboxyl group of the adjacent glutamate, [alpha-gamma] represents a peptide bond between the alpha amino group of the first glutamate and the gamma carboxyl group of the second glutamate [epsilon-alpha] represents a peptide bond between the epsilon amino acid of lysine and the alpha carboxyl group of the indicated amino acid"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001US-0851422
                                                                                                                                                                                                (first entry)
                                                                                                                                        cytotoxic peptide; epsilon-amino group; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AA:
                                                                                                                                                                                                                                                         peptide;
                                                                                                                         c peptide; epsilon-amino group; cancer; cytostatic;
skin; channel-forming peptide; apoptosis; therapy.
                                                                                                                                                                                                                                                                                                                                                                                        Score 126; DB; Pred. No. 6.1
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                           25
                                                                                                                                                                                                                                                                                                                                                                                                                       BB
                                                                                                                                                                                                                                                                                                                                                                                                       le-13;
                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                         25
                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
RESULT 4
AAE18197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsilon-amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, lung or skin. Cytolytic peptide also known as channel-forming peptide, typically disrupt cell.membrane, causing cell lysis and death (apoptosis) upon contact. The present sequence is Entamoeba histolytica procytotoxin, amoebapore helix 3.
                                                                              Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   prostate;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAE18197 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Υu Χ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09-MAY-2000;
16-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (GREE-) GREENVILLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity 100 nes 25; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GFIATLCTKVLDFGIDKLIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GFIATLCTKVLDFGIDKLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wagner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ovary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Page
                                                                                     /note= "Lys(R), where R is the unmodified epsilon-amino group of the adjacent Lys, or is [epsilon-gamma]-Glu, [epsilon-gamma]-Glu, [epsilon-qamma]-Glu, [epsilon-alpha]-(Phe)1-3, [epsilon-alpha]-(Tyr)1-3, [epsilon-alpha]-(Tyr)1-3, [epsilon-alpha]-(Lys)1-3 or [epsilon-alpha]-(Tyr)1-3, [epsilon-a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000US-203063P
2000US-212042P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cytotoxic peptide; epsilon-amino group; cancer; cytostatic;
ry; lung; skin; channel-forming peptide; apoptosis; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
/note= "Lys(R), where R is the unmodified epsilon-amino group of the adjacent Lys, or is [epsilon-gamma]-Glu, [epsilon-gamma]-Glu-[alpha-gamma]-(Glu)1-3,
                                                  /note= "Lys(R),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HOSPITAL SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      33pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    treating cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 126; pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; DB 23;
. 6.1e-13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
```

```
밁
                                Ş
                                                                                                                                               Matches
                                                                                        Query Match
Best Local
                                                                                                                                                                         The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsilon-amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, lung or skin. Cytolytic peptide also known as channel-forming peptide, typically disrupt cell membrane, causing cell lysis and death (apoptosis) upon contact. The present sequence is procytotoxin.
                                                                                                                                                                                                                                                                                                                                                                           A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                            Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09-MAY-2000;
16-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09-MAY-2001; 2001WO-US40690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (GREE-) GREENVILLE HOSPITAL SYSTEM
                  GFIATLCTKVLDFGIDKLIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2002-154423/20
GFIATLCTKVLDFGIDKLIQLIEDK
                                                                                                                                                                                                                                                                                                                            <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wagner TE;
                                                                       25;
                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                        Page 23;
                                                                                                                                           25 AA;
                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note= "Lys(R), where R is the unmodified epsilon-amino group of the adjacent Lys, or is [epsilon-gamma]-Glu, [epsilon-gamma]-Glu, [epsilon-alpha]-Glu-[epsilon-alpha]-(Php)1-3, [epsilon-alpha]-(Tyr)1-3, [epsilon-alpha]-(Tyr)1-3, [epsilon-alpha]-(Tyr)1-3, [epsilon-alpha]-(Tyr)1-3, [epsilon-alpha]-(Tyr)1-3 or [epsilon-alpha]-(Arg)1-3; where [epsilon-gamma] represents a peptide bond between the epsilon amino group of lysine and the gamma carboxyl group of the adjacent glutamate, [alpha-gamma] represents a peptide bond between the alpha amino group of the first glutamate, [epsilon-alpha] represents a peptide bond between the epsilon-alpha] represents a peptide bond between the epsilon amino acid of lysine and the alpha carboxyl group of the indicated amino acid, and 1-3 indicates that 1,2 or 3 of the designated amino acid can be linked to the first via conventional peptide bonds"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    [epsilon-alpha]-(Phe)]-3, [epsilon-alpha]-(Tyr)]-3, [epsilon-alpha]-(Tyr)]-3 or [epsilon-alpha]-(Ary)]-3, [epsilon-alpha]-(Ary)]-3, where [epsilon-gamma] represents a peptide bond between the epsilon amino group of lysine and the gamma carboxyl group of the adjacent glutamate, [alpha-gamma] represents a peptide bond between the alpha amino group of the first glutamate and the gamma carboxyl group of the second glutamate, [epsilon-alpha] represents a peptide bond between the epsilon amino acid of lysine and the alpha carboxyl group of the indicated amino acid, and 1-3 indicates that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000US-203063P
2000US-212042P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the first via
                                                                                                                                                                                                                                                                                                                      33pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or 3 of the designated amino acid can be linked to first via conventional peptide bonds"
                                                                                      98.4%;
100.0%
                                                                                                                                                                                                                                                                                                                        English.
                                                                                        .0%;
                                                                   0,
                                                                                      Score
Pred.
25
                                                                     Mismatches
                                                                                      126;
. No.
                                                                                                       DΒ
                                                                                      .1e-1
                                                                                                       23;
                                                                     0
                                                                                                       Length 25
                                                                   Indels
                                                                   0
                                                                                                                                                                                                                                                                   cytotoxic
                                                                   Gaps
```

RESULT 5

0,:

```
RESULT 6
AAO21738
ID AAO2
XX
AC AAO2
XX
DT 13-S
XX
DE Proc
XX
KW Cytc
                                                                                                                                                            В
                                                                                                                                                                              Š
                                                                                                                                                                                                       Query Match
Best Local S
Matches 25
                                                                                                                                                                                                                                                                      The invention relates to a procytotoxin comprising a cytotoxic peptide bound to an inactivator via a peptide bond, where the peptide bond is susceptible to cleavage by a targeting specific protease. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, breast, skin, lung or pancreas. This sequence represents a procytotoxin cytolytic peptide sequence relating to the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cytotoxic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Procytotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAO21737 standard; Peptide;
                                                                                                                                                                                                                                                                                                                                                                         A new procytotoxin useful in the treatment of cancer of e.g. prostate, ovary, breast, or skin, has a cytotoxic peptide bound to an inactivate via a peptide bond cleavable by a specific protease \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA021737;
                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                      Disclosure; Page 7; 21pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                        WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (YUXX/) YU X.
(WAGN/) WAGNER T E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09-MAY-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-AUG-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-APR-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US2002045736-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Modified-site
            Cytotoxic;
                                 Procytotoxin cytolytic peptide #3.
                                                        13-SEP-2002
                                                                                                    AAO21738 standard;
                                                                                                                                                            _
                                                                                                                                                                                                                                                                                                                                                                                                                          2002-507251/54
                                                                                                                                                                       GFIATLCTKVLDFGIDKLIQLIEDK 25
                                                                                                                                                           GFIATLCTKVLDFGIDKLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           xic; cytostatic; procytotoxin; inactivator; proteas
prostate; breast; skin; lung; pancreas; cytolytic.
                                                                                                                                                                                                                                                                                                                                                                                                                                              Wagner TE;
prostate;
                                                                                                                                                                                                        l Similarity
25; Conserv
 cytostatic; procytotoxin;
state; breast; skin; lung;
                                                                                                                                                                                                                                                     26
                                                                                                                                                                                                       98.4%;
llarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cytolytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2001US-0851422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001US-0938623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                        (first entry)
                                                                                                                                                                                                                                                     ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        to the alpha 26 /note- "The a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note= "The alpha carboxyl group of Phe is peptide
bonded to the epsilon amino group of Lys"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note-
                                                                                                     Peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               epsilon amino group of Lys
a carboxyl group of Phe"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26
                                                                                                                                                                                                        0
                                                                                                     26
                                                                                                                                                                                                       Score 126; DB 23;
Pred. No. 6.4e-13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                #2
                                                                                                                                                             25
                                                                                                     Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        inactivator; protease; cancer;
 inactivator; protease;
pancreas; cytolytic.
                                                                                                                                                                                                                             Length
                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                               26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           peptide bonded
                                                                                                                                                                                                                                                                                                                                                                                          inactivator
                                                                                                                                                                                                          0
                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                           0
```

```
RESULT 7
AAE18200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                   The invention relates to a procytotoxin comprising a cytotoxic pept bound to an inactivator via a peptide bond, where the peptide bond susceptible to cleavage by a targeting specific protease. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, breast, skin, lung or pancreas. This sequence represents a procytotoxin cytolytic peptide sequence relating to the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 A new procytotoxin useful in the treatment of cancer of e.g. prostate, ovary, breast, or skin, has a cytotoxic peptide bound to an inactivator via a peptide bond cleavable by a specific protease .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US2002045736-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Modified-site
                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Page 7; 21pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Yu X,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09-MAY-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-AUG-2001; 2001US-0938623
                                                                                                                       Protoxin #1
                                                                                                                                            07-MAY-2002
                                                                                                                                                                 AAE18200;
                                                                                                                                                                                      AAE18200 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (YUXX/) YU X.
(WAGN/) WAGNER T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-APR-2002
                                                                                      prostate;
                                  Modified-site
                                                                Unidentified
                                                                                                                                                                                                                                            1 GFIATLCTKVLDFGIDKLIQLIEDK
                                                                                                                                                                                                                                                       GFIATLCTKVLDFGIDKLIQLIEDK 25
                                                                                                                                                                                                                                                                                       25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wagner TE;
                                                                                      ovary;
                                                                                                                                                                                                                                                                                                                                26
                                                                                                                        for
                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001US-0851422
                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                AA;
                                                                                     cytotoxic peptide; epsilon-amino group;
ry; lung; skin; channel-forming peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note=
to the
26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   to the alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 င်
                                                                                                                      treating cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note=
/note= "Lys-[epsilon-alpha]; where [epsilon-alpha]
represents a peptide bond between the epsilon amin
group of lysine and the alpha carboxyl group of th
  represents
group of ly
                                  Location/Qualifiers 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                      peptide;
                                                                                                                                                                                                                                                                                                 98.4%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               epsilon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "The alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              epsilon amino group of Lys
a carboxyl group of Phe"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             epsilon amino group of Lys
carboxyl group of Phe"
                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                         26
                                                                                                                                                                                                                                                                                                 Score 126; DB 23;
pred. No. 6.4e-13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pha carboxyl group of amino group of Lys"
                                                                                                                                                                                                                                             25
                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Phe
                                                                                       cancer; cytostatic;
apoptosis; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                              26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             peptide
                                                                                                                                                                                                                                                                                         0;
    n amino of the
                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bonded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bonded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bonded
                                                                                                                                                                                                                                                                                          0
```

```
RESULT 8
AAO21736
Ę
                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsilon-amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, lung or skin. Cytolytic peptide also known as channel-forming peptide, typically disrupt cell membrane, causing cell lysis and death (apoptosis) upon contact. The present sequence is protoxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ϋ́u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09-MAY-2000;
16-JUN-2000;
                                                                                                                                                                                                                                             Cytotoxic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Page 12; 33pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WP1; 2002-154423/20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       09-MAY-2001; 2001WO-US40690
                                                                                                                                                                                                                                                                                               13-SEP-2002
                                                                                                                                                                                                                                                                                                                       AA021736;
                                                                                                                                                                                                                                                                                                                                               AAO21736 standard; Peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (GREE-) GREENVILLE HOSPITAL SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-NOV-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200185777-A2
            US2002045736-A1
                                                              Modified-site
                                                                                                                            Modified-site
                                                                                                                                                                   Modified-site
                                                                                                                                                                                                       Unidentified
                                                                                                                                                                                                                                                                    Procytotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                               1 GFIATLCTKVLDFGIDKLIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GFIATLCTKVLDFGIDKLIQLIEDK 25
                                                                                                                                                                                                                               prostate;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l Similarity
25; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wagner TE;
                                                                                                                                                                                                                             cytostatic; procytotoxin;
state; breast; skin; lung;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000US-203063P
2000US-212042P
                                                                                                                                                                                                                                                                   cytolytic peptide #1
                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                 Location/Qualifiers
                                                            bonded to the epsilon amino group of this Glu is peptide group of another Glu"
                                                                                                                            to the gamma
26
                                                                                                                                                    /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  adjacent phenylalanine"
                                     bonded
                                                                                                                /note=
                                                 /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98.4%;
100.0%;
                                  "The gamma carboxyl group of this Glu is peptide to the alpha amino group of another Glu"
                                                                                  "The gamma carboxyl group of this Glu is peptide to the epsilon amino group of Lys. The alpha amino of this Glu is peptide bonded to the gamma carboxyl
                                                                                                                                                                                                                                                                                                                                                27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                     epsilon amino group of Lys is a carboxyl group of Glu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 126; DB 23;
Pred. No. 6.4e-13;
                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                               pancreas; cytolytic.
                                                                                                                                                                                                                                            inactivator; protease; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                    peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                    bonded
                                                                                                    amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
```

```
RESULT 9
AAE18199
ID AAE1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δõ
д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates to a procytotoxin comprising a cytotoxic peptide bound to an inactivator via a peptide bond, where the peptide bond is susceptible to cleavage by a targeting specific protease. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, breast, skin, lung or pancreas. This sequence represents a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A new procytotoxin useful in the treatment of cancer of e.g. prostate, ovary, breast, or skin, has a cytotoxic peptide bound to an inactivator via a peptide bond cleavable by a specific protease -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Yu X,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09-MAY-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-APR-2002
          09-MAY-2000;
16-JUN-2000;
                                               09-MAY-2001;
                                                                                                 WO200185777-A2
                                                                                                                                                                         Modified-site
                                                                                                                                                                                                                                                                           Unidentified
                                                                                                                                                                                                                                                                                                   prostate; ovary;
                                                                                                                                                                                                                                                                                                                Procytotoxin;
                                                                                                                                                                                                                                                                                                                                        Procytotoxin #3
                                                                                                                                                                                                                                                                                                                                                                 07-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                          AAE18199;
                                                                                                                                                                                                                                                                                                                                                                                                                 AAE18199 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         procytotoxin cytolytic peptide sequence relating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (YUXX/) YU X.
(WAGN/) WAGNER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-AUG-2001; 2001US-0938623
                                                                                                                                                                                                                                        Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GFIATLCTKVLDFGIDKLIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GFIATLCTKVLDFGIDKLIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wagner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Page 7; 21pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001US-0851422
          2000US-203063P
2000US-212042P
                                               2001WO-US40690
                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                  cytotoxic peptide; epsilon-amino group; cancer; cytostatic;
ry; lung; skin; channel-forming peptide; apoptosis; therapy.
                                                                                                                                                                      /note- "Lys-[epsilon-gamma]; where [epsilon-gamma] represents a peptide bond between the epsilon amino group of lysine and the gamma carboxyl group of the adjacent glutamate"
                                                                                                                    /note= "Glu-[alpha-gamma]; where [alpha-gamma] represents represents a peptide bond between the alpha amino group of the first glutamate and the gamma carboxyl group of the second glutamate"
                                                                                                                                                                                                                                     Location/Qualifiers 25
                                                                                                                                                                                                                                                                                                                                      for treating
                                                                                                                                                                                                                                                                                                                                                                                                                 peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98.4%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                   27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0:
                                                                                                                                                                                                                                                                                                                                        cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 126;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6.7e-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
RESULT 10
AAE18201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
Best 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsilon-amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, lung or skin. Cytolytic peptide also known as channel-forming peptide, typically disrupt cell membrane, causing cell lysis and death
            ĭ
                                                              09-MAY-2000;
16-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; Page 11; 33pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ľ
                                                                                                     09-MAY-2001;
                                                                                                                               15-NOV-2001
                                                                                                                                                         WO200185777-A2
                                                                                                                                                                                                                                     Modified-site
                                                                                                                                                                                                                                                                                                                 Modified-site
                                                                                                                                                                                                                                                                                                                                                       Unidentified
                                                                                                                                                                                                                                                                                                                                                                              prostate;
                                                                                                                                                                                                                                                                                                                                                                                             Procytotoxin;
                                                                                                                                                                                                                                                                                                                                                                                                                       Protoxin #2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAE18201;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAE18201 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (GREE-) GREENVILLE HOSPITAL SYSTEM
                                     (GREE-) GREENVILLE HOSPITAL SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              apoptosis) upon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GFIATLCTKVLDFGIDKLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GFIATLCTKVLDFGIDKLIQLIEDK
          Wagner TE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
25; Conser
                                                                                                                                                                                                                                                                                                                                                                               ovary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27
                                                                                                                                                                                                                                                                                                                                                                                                                     for treating cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                              2000US-203063P.
2000US-212042P.
                                                                                                     2001WO-US40690
                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                            cytotoxic peptide; epsilon-amino group; cancer; cytostatic;
ry; lung; skin; channel-forming peptide; apoptosis; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₹
                                                                                                                                                                               /note- "Lys-[epsilon-alpha]; where [epsilon-alpha] represents a peptide bond between the epsilon amin group of lysine and the alpha carboxyl group of that adjacent phenylalanine"
                                                                                                                                                                                                                                                            represents a peptide bond between the epsilon amino group of lysine and the alpha carboxyl group of phenylalanine, and a standard peptide linkage between
                                                                                                                                                                                                                                                                                                                 Location/Qualifiers 17..18
                                                                                                                                                                                                                                                                                                  'note= "Lys((epsilon-alpha)-Phe); where (epsilon-alpha)
                                                                                                                                                                                                                                                 ysine and phenylalanine"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 126;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . 6.7e-13; ches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 23;
                                                                                                                                                                                             carboxyl group of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               is procytotoxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

Cytotoxic; cytostatic; procytotoxin; inactivator; proteas ovary; prostate; breast; skin; lung; pancreas; cytolytic.

inactivator; protease; cancer;

Unidentified

The invention relates to a procytotoxin comprising a cytotoxic pept bound to an inactivator via a peptide bond, where the peptide bond susceptible to cleavage by a targeting specific protease. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, breast, skin, lung or pancreas. This sequence represents a covary breast, skin, lung or pancreas.

procytotoxin cytolytic

peptide sequence

relating

sequence represents a ating to the invention.

c peptide bond is

24

A۸

A new procytotoxin useful in the treatment of cancer of e.g. ovary, breast, or skin, has a cytotoxic peptide bound to an via a peptide bond cleavable by a specific protease .

to an inactivator

Example 1;

Page 10; 21pp;

English.

WPI; 2002-507251/54.

Wagner

09-MAY-2001; 2001US-0851422

27-AUG-2001; 2001US-0938623.

18-APR-2002 US2002045736-A1

(YUXX/) YU X. (WAGN/) WAGNER T E.

```
ARESULT 11
ARO21741
ID ARO21741
AC ARO21
AC CYCOT
KW CYCOT
KW CYCOT
KW CYCOT
KW CYCOT
AC ARO21
AC ARO2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SXCCCCCCCXXXX PT TTXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsilon-amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, lung or skin. Cytolytic peptide also known as channel forming peptide, typically disrupt cell membrane, causing cell lysis and death
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-154423/20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA021741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Procytotoxin cytolytic peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (apoptosis) upon contact.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GFIATLCTKVLDFGIDKFLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GFIATLCTKVLDFGIDK-LIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . Similarity
25; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Page 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       90.2%;
96.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              33pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 115.5;
Pred. No. 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       No. 3.1e-11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          is protoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ۲.
```

```
AAE18204
ID AAE:
XX
AC AAE:
XX
AC OAE:
XX
DT 07-1
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 12
AAE18203
                                                                                                                                                                                                       Вþ
                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                             RESULT 13
                                                                                                                                                         Query Match
Best Local S
Matches 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 24
                                                                                                                                                                                                                         The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsilon-amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, lung or skin. Cytolytic peptide also known as channel forming peptide, typically disrupt cell membrane, causing cell lysis and death (apoptosis) upon contact. The present sequence is cytolytic peptide.
                                                                                                                                                                                                                                                                                                                                                                                                    WPI;
           07-MAY-2002
                                  AAE18204;
                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                      Example
                                                                                                                                                                                                                                                                                                                                                    A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                                                                                                                                                                                                                                                                                                                                                                                                                          Yu X,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-MAY-2000;
16-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09-MAY-2001; 2001WO-US40690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200185777-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Procytotoxin; cytotoxic peptide; epsilon-amino group; cancer; cytostatic; prostate; ovary; lung; skin; channel-forming peptide; apoptosis; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cytolytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAE18203;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAE18203 standard; peptide;
                                                      AAE18204 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                               (GREE-) GREENVILLE
                                                                                                              Н
                                                                                                                                   \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \mathbf{L}
                                                                                                            GFIATLCTKVLDFGIDKLIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GFIATLCTKVLDFGIDKLIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                peptide
                                                                                                                                                                                                                                                                                                                     Page 20;
                                                                                                                                                                                                       24
                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-203063P.
2000US-212042P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
          (first entry)
                                                                                                                                                                                                       A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for treating cancer.
                                                     peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                               HOSPITAL SYSTEM
                                                                                                                                                                                                                                                                                                                     33pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 87.1%;
96.0%;
                                                                                                                                                                     87.1%;
96.0%;
                                                       26
                                                                                                                                                         Score 111.5;
Pred. No. 1.26
0; Mismatches
                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 111.5;
Pred. No. 1.2e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₿
                                                       ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .2e-10;
les 0;
                                                                                                                                                                     .2e-10;
                                                                                                                                                                              DB 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 23;
                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24;
                                                                                                                                                                              24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>ب</u>
                                                                                                                                                        1;
                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1;
                                                                                                                                                         <u>ب</u>
```

```
ARESULT 14
ARE18205
ID ARE18
AC ARE18
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SO CCCCCCCXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsilon-amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, overy, lung or skin. Cytolytic peptide also known as channel-forming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                                                                                                                                                                                                                                                                                                   07-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             prostate;
                                                                                                                           Unidentified
                                                                                                                                                                          prostate;
                                                                                                                                                                                                   Procytotoxin;
                                                                                                                                                                                                                                               Procytotoxin
                                                                                                                                                                                                                                                                                                                                                                                                  AAE18205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    peptide,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Example 1; Page 20; 33pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2002-154423/20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yu X,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15-NOV-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200185777-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Procytolytic peptide for treating cancer
                                                      Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (GREE-) GREENVILLE HOSPITAL SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (apoptosis) upon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity les 24; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GFIATLCTKVLDFGIDKLIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GFIATLCTKVLDFGIDK-IQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ung or skin. Cytolytic peptide also known as channel-forming typically disrupt cell membrane, causing cell lysis and death
                                                                                                                                                                                                                                                                                                                                                                                                  standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ovary;
                                                                                                                                                                          ovary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                               #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000US-203063P.
2000US-212042P.
                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001WO-US40690
                                                                                                                                                                    cytotoxic peptide; epsilon-amino group; ry; lung; skin; channel-forming peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cytotoxic peptide; epsilon-amino group;
ry; lung; skin; channel-forming peptide;
                                                Location/Qualifiers 24..26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         glutamate acid residue
C-terminal lysine"
                                                                                                                                                                                                                                            for treating cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers 23
/note= "Lys([epsilon-gamma]-Glu-[alpha-gamma]-Glu);
where [epsilon-gamma] represents a peptide bond bet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note= "Addition of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          contact.
                                                                                                                                                                                                                                                                                                                                                                                                  peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            87.18;
96.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence is procytolytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                  26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 111.5; DB 23; Pred. No. 1.3e-10; Orange O;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24
                                                                                                                                                                                                                                                                                                                                                                                                  ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   two gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                glutamate linked side-
epsilon amino group of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          apoptosis; therapy.
                                                                                                                                                                       apoptosis; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          side-chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ۲.
```

peptide bond between

```
RESULT 15
AAG06275
   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
25-FEB-1999;
05-MAR-1999;
09-MAR-1999;
23-MAR-1999;
25-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention relates to a procytotoxin, comprising a cytotoxic peptide with at least one lysine residue bound by a peptide bond to at least one amino acid via the epsilon amino group of the lysine residue. The procytotoxin is used to treat cancer, particularly of the prostate, ovary, lung or skin. Cytolytic peptide also known as channel-forming peptide, typically disrupt cell membrane, causing cell lysis and death (apoptosis) upon contact. The present sequence is procytotoxin.
                                                                                             25-FEB-2000;
                                                                                                                                                         EP1033405-A2
                                                                                                                                                                                      Arabidopsis thaliana
                                                                                                                                                                                                                                Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter
                                                                                                                                                                                                                                                                               Arabidopsis thaliana protein fragment SEQ ID
                                                                                                                                                                                                                                                                                                                                             AAG06275;
                                                                                                                                                                                                                                                                                                                                                                             AAG06275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A procytotoxin comprising a cytotoxic peptide with at least one lysine residue which is converted into a cytotoxin in a target cell is used for treating cancer, particularly of the prostate, skin, ovary or lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ϋ́u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-MAY-2000;
16-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09-MAY-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200185777-A2
                                                                                                                                                                                                                                                                                                              17-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (GREE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2002-154423/20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l Similarity
24; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GREENVILLE HOSPITAL SYSTEM
                                                                                                                                                                                                                                                                                                                                                                             standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Page 24; 33pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26 AA;
                                                                                                                                                                                                                     sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000US-203063P.
2000US-212042P.
                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001WO-US40690
                                                                                             2000EP-0301439
99US-0121825.
99US-0123180.
99US-0123548.
99US-0125788.
99US-0125786.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the epsilon amino group of lysine and the gamma carboxyl group of adjacent glutamate, [alpha-gamma] represents a peptide bond between alpha amino group of glutamate and gamma carboxyl group of adjacent glutamate"
                                                                                                                                                                                                                                                                                                                                                                             Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  87.1%;
96.0%;
                                                                                                                                                                                                                                                                                                                                                                             412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 111.5;
pred. No. 1.3e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.3e-10;
hes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 23;
                                                                                                                                                                                                                                                                               NO: 2989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.
                                                                                                                                                                                                                                  promoter;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
16-APR-1999
11-APR-1999
23-APR-1999
23-APR-1999
23-APR-1999
30-APR-1999
30-APR-1999
30-APR-1999
30-APR-1999
30-APR-1999
30-APR-1999
30-APR-1999
30-APR-1999
30-APR-1999
31-MAY-1999
31-MAY
9908-0130891
9908-0132486
9908-0132486
9908-0132486
9908-0132486
9908-0132486
9908-0132486
9908-0132486
9908-0134256
9908-0134271
9908-0134271
9908-0136721
9908-0136721
9908-0136721
9908-0136722
9908-0136722
9908-0136722
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0139453
9908-0140853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0129845.
99US-0130077.
99US-0130449.
99US-0130510.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0126785.
99US-0127462.
99US-0128234.
99US-0128714.
```

```
В
                                                                                                                               δõ
Search completed: May Job time: 39.1176 secs
                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                12-OCT 1999
13-OCT 1999
13-OCT 1999
14-OCT 1999
14-OCT 1999
14-OCT 1999
14-OCT 1999
14-OCT 1999
14-OCT 1999
21-OCT 1999
21-OCT 1999
21-OCT 1999
21-OCT 1999
22-OCT 1999
22-OCT 1999
25-OCT 1999
25-OCT 1999
25-OCT 1999
26-OCT 1999
26-OCT 1999
27-OCT 1999
28-OCT 1999
28-OCT 1999
28-OCT 1999
28-OCT 1999
28-OCT 1999
29-OCT 1999
                                                                                       249
                                                                                                                                 9
                                                                                   KVLDFGIDKLIQLIEDK
                                                                                                                                                                        th 42.:
| Similarity 58.8
| 10; Conservative
                                                                                                                                                                                                                                                                990S-0158369
990S-0159294,
990S-0159295,
990S-0159230,
990S-01595638
990S-01595638
990S-0160767,
990S-0160767,
990S-0160768
990S-0160768
990S-0160815,
990S-0160980,
990S-0161404,
990S-
                  9,
                  2003,
                                                                                                                                 25
                                                                                                                                                                                               3.8%;
                    16:15:36
                                                                                                                                                                        Score 54; DB Pred. No. 3.3; Mismatches
                                                                                                                                                                                             DВ
3.3;
                                                                                                                                                                                                                         21;
                                                                                                                                                                                                                    Length 412;
                                                                                                                                                                           0;
                                                                                                                                                                        Gaps
```

0

19-JUL-1999
19-JUL-1999
19-JUL-1999
19-JUL-1999
19-JUL-1999
19-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
21-JUL-1999
21-JUL-1999
22-JUL-1999
22-JUL-1999
22-JUL-1999
22-JUL-1999
22-JUL-1999
22-JUL-1999
23-JUL-1999
23-JUL-1999
24-JUL-1999
25-JUL-1999
27-JUL-1999
27-JUL-1999
28-JUL-1999
29-JUL-1999
20-AUG-1999
20-AUG-1999
21-AUG-1999
21-AUG

990S-0144333 990S-0144333 990S-0144333 990S-0144334 990S-0144814 990S-0145086 990S-0145086 990S-0145086 990S-0145086 990S-0145218 990S-014730 990S-014730 990S-014917 990S-014917 990S-014917 990S-014917 990S-014917 990S-014917 990S-0151086 990S-0151086 990S-0151086 990S-0151088 990S-0151088 990S-0154779 990S-0154779 990S-0154779 990S-0154779 990S-0155486 990S-0155486 990S-0155486 990S-0155486 990S-0155486 990S-0157753 990S-0157753 This page blank (1877)

Run

on :

Minimum DB Maximum DB

seq

Database

Scoring table: Sequence: Perfect score: Title:

Searched:

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the r
score greater than
and is derived by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           мау
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     is the number of results predicted by chance to have a ster than or equal to the score of the result being printed, rived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         654321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-851-422A-8
128
1 GFIATLCTKVLDFGIDKLIQLIEDKXX
      Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   262574 seqs, 29422922 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Issued_Patents_AA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
/cgn2_6/ptodata/1/iaa/Packfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9, 2003, 16:13:10 ; Search time 9.79412 Seconds (without alignments) 81.112 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
      GenCore version 5.1.4_p5_4578 (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gapext 0.5
                    US-09-134-001C-3016
US-09-384-162-7
US-08-456-647B-41
US-08-237-401A-21
US-08-701-191A-23
US-08-673-789-9
US-08-702-367A-19
PCT-US95-04-881-39
US-09-134-001C-3640
US-09-134-001C-3640
US-09-137-581-3
US-09-139-55B-17
US-09-420-915-3
US-09-134-001C-4730
US-09-134-001C-4730
US-09-228-086-76
US-09-03-289-2
US-09-03-289-2
US-09-03-289-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-426-509A-19
PCT-US95-05008-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27
  Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
8, Appli
18, Appl
4730, Ap
76, Appli
2, Appli
2, Appli
2, Appli
2, Appli
5, Appli
                                                                                                                                                            19, Appl
3016, Ap
7, Appli
41, Appli
23, Appli
23, Appli
23, Appli
23, Appli
29, Appli
29, Appli
29, Appli
29, Appli
20, Appli
21, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESUL
US-08
; Sec
; Pat
; GE
                                                                                 US-01
                      Qu.
    Matches
    0
    Conservative
```

Result No.

Score

0

ery Ma est Locators	B-426-50 B-4	2223000000000044444 8900120000000000000000000000000000000000
tch al s	1 · 509A - 1 · 60 · 60 · 60 · 60 · 60 · 60 · 60 ·	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
imilarity ; Conser	- 19 ORAGO CONTROL OF	& & & & & & & & & & & & & & & & & & &
ity servat	olication US (169) (169) (170)	6 108 6 108 6 108 6 6 108 6 6 108 6 6 115 6 6 115 8 67 7 7 8 8 109 8 8 1109 8 8 1110 8 1110 8 1110
39.1%; 53.3%; ive	ion US/0842) h, Axel sky, Mikha	00000000000000000000000000000000000000
Scor Pred 4; M	0, 0, 2, 4, 0, 0, 1, 1, 1, 0,	US-08- US-09- US-09- US-09- US-08- US-08- US-08- US-08- US-08- US-08- US-08- US-08- US-08- US-08- US-08- US-08- US-08- US-08- US-08- US-09- US-08- US-09- US-08- US-09- US-08- US
re 50; DB 1. No. 7; Mismatches	ALIGNMENTS S09A AMARYOCYTIC KINASES Americas Americas 545 545	00000000000000000000000000000000000000
DB 4; 7; hes		7-598-10 3-289-5 3-289-5 -16435-5 -16435-10 -1786-1 6-012B-2 6-509A-4 -00108-6 -0118-6 -994-17 5-578-0-11 3-289-11 3-289-11 3-289-11 -16435-11 -18435-11 -19354A-2 1-19354A-3 9-537A-40
Length 3; Ind	PROTEIN	
49 els		ស ស ស ស ស ស ស ស ស ស ស ស ស ស ស ស ស ស ស
9;		Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence
Gaps		10, 10, 10, 10, 11, 11, 11, 11, 11, 11,
		Appli Appli

```
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                   ş
                                                        RESULT 3
US-09-134-001C-3016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCT-US95-05008-19
                                                                                                                                                                                                                                             CT-US95-05008-19
                             Sequence 3016, Application US/09134001C Patent No. 6380370
              GENERAL INFORMATION:
                                                                                                                                                                                   Matches
                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 19, Application PC/TUS9505008 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
CLASSIFICATION:
CLASSIFICATION DATA:
PRIOR APPLICATION NUMBER: US 08/232,545
APPLICATION NUMBER: 22-APR-1994
   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                TELEX: 66141 PENNIE
                                                                                                                                                                                                                                                                                                                                                                                         NAME: COTUZZÍ, LBUTB A.
REGISTRATION NUMBER: 30,742
REFERENCE/DOCKET NUMBER: 768
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212,790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PA C COMPONENT OF THE PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION NUMBER: PCT/US95/05008
FILING DATE: 24-APR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION:
                                                                                                                                                                                                                                                             MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                       365 TLCCKIADFGLARII 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     365 TLCCKIADFGLARII 379
                                                                                                                                                                          39.1%;
Local Similarity 53.3%;
nes 8; Conservation
                                                                                                                                                                                                                                                                                                       TYPE: amino acid
                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY: U.S.A. ZIP: 10036
                                                                                                                                    5 TLCTKVLDEGIDKLI 19
                                                                                                                                                                                                                                                                                        STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TLCTKVLDFGIDKLI 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New York
                                                                                                                                                                                                                                                                                                                    499 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E: Pennie & Edr
1155 Avenue of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Redwood City, California 94063-4720 United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hofgarten Str. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wissenschaften E.V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sugen, inc.
515 Galveston Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Munchen 80539
                                                                                                                                                                                                                                                                          unknown
Doucette-Stamm et al
                                                                                                                                                                                                                                                          protein
                                                                                                                                                                                                                                                                                         unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kinases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Novel Megakaryocytic Protein Tyrosine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Edmonds
of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                              7683-074
                                                                                                                                                                                                 Pred.
                                                                                                                                                                                                            Score 50;
                                                                                                                                                                                Mismatches
                                                                                                                                                                                                 No.
                                                                                                                                                                                                               DB 5;
                                                                                                                                                                                                              Length 499;
                                                                                                                                                                                 Indels
                                                                                                                                                                                 0
                                                                                                                                                                                Gaps
                                                                                                                                                                                 <u>..</u>
```

```
PRIOR APPLICATION NUMBER: US 60/064,964
PRIOR FILING DATE: 1997-11-08
PRIOR APPLICATION NUMBER: US 60/055,779
PRIOR FILING DATE: 1997-08-14
NUMBER OF SEQ ID NOS: 5674
SEQ ID NO 3016
LENGTH: 273
TYPE: PRT
ORGANISM: Staphylococcus epidermidis
US-09-134-001C-3016
                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-384-162-7; Sequence 7, Application US/09384162; Patent No. 6376747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                       US-08-456-647B-41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-384-162-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Xing, Ti
APPLICANT: Malik, Kamal
APPLICANT: Malik, Kamal
APPLICANT: Miki L., Brian
TITLE OF INVENTION: NO. 6376747el Plant-Deri
FILE REFERENCE: 08-884280US
CURRENT APPLICATION UNMBER: US/09/384,162
CURRENT FILING DATE: 1999-08-27
NUMBER OF SEQ ID NOS: 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 7
LENGTH: 222
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 38.3%;
Best Local Similarity 43.5%;
Matches . 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                                                                                   Sequence 41, Application US/08456647B Patent No. 5811516
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILE REFERENCE: GTC-007
CURRENT APPLICATION NUMBER: US/09/134,001C
CURRENT FILING DATE: 1998-08-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO STAPHYLOCOCC TITLE OF INVENTION: EPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Leishmania donovani
                 COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                AVPLICANT: Lemke Ph.D. et al., Greg E. TITLE OF INVENTION: PROTEIN-TYROSINE KINASE GENES NUMBER OF SEQUENCES: 54
                                                                                                                                                                      CORRESPONDENCE ADDRESS
                                                                                       STREET: 4225 EX CITY: La Jolla STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                    |: |||: |||| :
| 115 KIADFGVSKLIQTL || 128
                                                       COUNTRY: US
ZIP: 92037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              56 GVFAFICTTVMTFGASALIPLFK 78
COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity 57.
                                                                                                                                                                                                                                                                                                                                                                                                                       9 KVLDFGIDKLIQLI 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GFIATLCTKVLDFGIDKLIQLIE
                                                                                                                                                    ADDRESSEE:
                                                                                                                              E: Fish & Richardson P.C. 4225 Executive Square, Suite 1400
E: Floppy disk
IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               36.7%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6376747el Plant-Derived Map Kinase Kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 49;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 47;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 222;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 273;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-456-647B-41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-237-401A-41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 41, Application US/08237401A Patent No. 5837448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                           FILING DATE: 15-MAY-1992
ATTORNEY/AGENT INFORMATION:
NAME: Halle Ph.D., Lisa A.
REGISTRATION NUMBER: 38,347
REFERENCE/DOCKET NUMBER: 0725
TELECHONE: (619) 678-5070
TELEPHONE: (619) 678-5099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS:
TOPOLOGY: lin
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (619) 678-5099
NFORMATION FOR SEQ ID NO: 41:
               NFORMATION FOR SEQ ID NO:
                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/884,486
FILING DATE: 15-MAY-1992
                                                                                                                                                                                                                                          SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Lemke Ph.D. et al., Greg E. TITLE OF INVENTION: PROTEIN-TYROSINE KINASE GENES NUMBER OF SEQUENCES: 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: 07:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 678-5070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 15-MAY-1992
ATTORNEY/AGENT INFORMATION:
NAME: Wetherell Ph.D., J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US 08 FILING DATE: 02-MAY-1994 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:
                                                                                                                                                                                            FILING DATE: 02 CLASSIFICATION:
                                                                                                                                                                                                        APPLICATION NUMBER: US/0 FILING DATE: 02-MAY-1994
                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Rolesco "'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
nes 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/0
FILING DATE: 02-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OPERATING SYSTEM:
SOFTWARE: Patentl
                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                            STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6 LCTKVLDFGIDKLI 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LCCKVSDFGLTRLL 21
                                                                                                                                                                                                                                                                                                                                                                     . CA
                                                                                                                                                                                                                                                                                                                                                 92037
CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                         E: Fish & Richardson P.C. 4225 Executive Square, Suite 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              54 amino acids
                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                             Jolla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PatentIn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                             Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            35.9%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PC-DOS/MS-DOS
In Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US 08/237,401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US 07/884,486
                                                                                                                                                                                                                              US/08/237,401A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US/08/456,647B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31,678-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              John R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07251/007002
                                                                              07251/007001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 46; DB Pred. No. 2.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
  밁
                                                                                 Query Match
Best Local Similarity
Thes 8; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-237-401A-41
                                                                                                                                                                                                                             US-08-701-191A-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-701-191A-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 23, Application US/08701191A Patent No. 5942428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: MOOSA MONAMMADI,
APPLICANT: and Stevan R. Hov
                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDJUM TYPE: 3.5" Diskette, 1.44 Mb
MEDJUM TYPE: Storage
MEDJUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS:
TOPOLOGY: 11:
MOLECULE TYPE:
                                                                                                                                                                                                                                                 TOPOLOGY: 1i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: 22
TELECOMMUNICATION INFORMATION:
TELEPHONE: (213) 489-1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: FastSEQ for CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: Warburg, Richard J
                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (2.1 67-3510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
151 LCCKVSDFGLTRLL 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity 57.1 hes 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE: August CLASSIFICATION: 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: Los Angeles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH:
                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIP: 90071-2066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
                                                       6 LCTKVLDFGIDKLI 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6 LCTKVLDFGIDKLI 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LCCKVSDFGLTRLL 21
                                                                                                                                                                                                                                                                                                                                      amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Warburg, Richard J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Suite 4700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and Stevan R. Hubbard
                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (213) 955-0440
                                                                                                                                                                                                                                                                           ss: single
linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lyon & Lyon
3 West Fifth Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nugust 21, 1996
ON: 530
                                                                                                                                                                                                                                                                                                                                                                amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein
                                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           not relevant
                                                                                                                                     35.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CRYSTALS OF THE TYROSINE KINASE DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OF NON-INSULIN RECEPTOR TYROSINE KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35.9%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IBM P.C. DOS 5.0 for Windows 2.0
                                                                                                                                     Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Joseph Schlessinger,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. 2.2;
                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ω
                                                                                                                                                          Length 279;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                              Indels
                                                                                                              ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                           Gaps '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
Ş
                                                                                                                                                                                                                                    RESULT 9
US-08-449-645A-19
                                                                                                                                                                                                                                                                                                         Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-673-789-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JS-08-673-789-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Patent No.
                                                                                                                                                                                                  Sequence 19, Application US/08449645A Patent No. 5981245
                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/177,81
FILING DATE: 04-JAN-1994
ATTORNEY/AGENT INFORMATION:
NAME: CAROL M. GRUPPI
REGISTRATION NUMBER: 37,341
REFERENCE/DOCKET NUMBER: 2026
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION 10758-4800 ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEX: 421792
NFORMATION FOR SEQ ID NO:
                                                                                      APPLICANT: Fox, Gary M.
TITLE OF INVENTION: EPH-Like Receptor Protein Tyrosine
TITLE OF INVENTION: Kinases
NUMBER OF SEQUENCES: 43
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: BUTTLE OF INVENTION: BUTTLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                       769 LCCKVSDFGLTRLL 782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: AMINO ACID
STRANDEDNESS: UNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: WORDPERFECT 5.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: NEW YORK
STATE: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET:
               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                               STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                                             STREET:
                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                       6 LCTKVLDFGIDKLI 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E OF INVENTION:
91320
                            r: 1840 Dehavilland Drive
Thousand Oaks
California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application US/08673789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         345 PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (212) 751-6849
               USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 , DOH 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                               UNKNOWN
                                                                                 Amgen Patent Operations/RBW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MORGAN & FINNEGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HOU, RENPING; SCHULZ, NICHOLAS, WOUDE, KROMER, LAWRENCE, F.; VANDE WOUDE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FLOPPY DISK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               UNKNOWN
                                                                                                                                                                                                                                                                                                                                                                                          35.9%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BSK RECEPTOR LIKE
TYROSINE KINASE AND LIGAND AND THEIR
USE IN DIAGNOSTIC AND THERAPEUTIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            METHODS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       08/177,812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US/08/673,789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9:
                                                                                                                                                                                                                                                                                                                                                                          3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                          Score 46; DB Pred. No. 64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2026-4105
                                                                                                                                                                                                                                                                                                                                                                                                            2
                                                                                                                                                                                                                                                                                                                                                                                                            Length 984;
                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                          Gaps
```

0;

6 LCTKVLDFGIDKLI 19

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
Query Match
Best Local Similarity
Thes 8; Conserva
                                                                        ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-702-367A-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 10
US-08-702-367A-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 19, Application US/08702367A Patent No. 5981246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Patent No. 5981246
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER:
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                               REFERENCE/DOCKET NUMBER: INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Fox, Gary M.
TITLE OF INVENTION: EPH-Like
TITLE OF INVENTION: Kinases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION: NAME: Winter; Robert B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      769 LCCKVSDFGLTRLL 782
                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                           CITY: Thousand Oaks
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
les 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                           CLASSIFICATION:
                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                         APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                               ZIP: 91320
                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/08/449,645A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6 LCTKVLDFGIDKLI 19
                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
                                                                                                                                : 984 amino acids amino acid
                                                                                                                                                                                                             Winter, Robert B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 984 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                            1840 Dehavilland Drive
                                                                                                                                                                                                                                                                                                                                                                                              USA
               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Amgen Patent Operations/RBW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Floppy disk
                                                                                                                    single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     single
                                                                                                                                                                                                                                            435
                             35.9%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35.9%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EPH-Like Receptor Protein Tyrosine
                                                                                                                                                                                                                                                                          US/08/702,367A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A-287
                          Score 46;
Pred. No.
                                                                                                                                                                                               A-287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 46; DB pred. No. 64; 3; Mismatches
              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              64;
                                           BG
                                             Ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ν
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 984;
                                          Length 984;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
               0:
              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
```

밁

769 LCCKVSDFGLTRLL 782

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
Query Match
Best Local Similarity
7; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-134-001C-3640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS: single; TOPOLOGY: linear; MOLECULE TYPE: protein PCT-US95-04681-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PCT-US95-04681-19
                                                                                        US-09-134-001C-3640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 19, Application PC/TUS9504681 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                    Sequence 3640, Application US/09134001C Patent No. 6380370 GENERAL INFORMATION:
                                                                                                                                       SEQ ID NO 3640
LENGTH: 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                       APPLICANT: Lynn Doucette-Stamm et al TITLE OF INVENTION: NUCLEIC ACID AND MAINO ACID SEQUENCES RELATING TO STAPHYLOCOCCUS TITLE OF INVENTION: EPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS FILE REFERENCE: GTC-007
CURRENT APPLICATION NUMBER: US/09/134,001C
CURRENT FILING DATE: 1998-08-13
PRIOR APPLICATION NUMBER: US 60/064,964
PRIOR APPLICATION NUMBER: US 60/065,779
PRIOR FILING DATE: 1997-11-08
PRIOR APPLICATION NUMBER: US 60/055,779
PRIOR APPLICATION DATE: 1997-08-14
NUMBER OF SEQ ID NOS: 5674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 984 amino acid
TYPE: amino acid
                                                                                                                           TYPE: PRT
                                                                                                      ORGANISM: Staphylococcus epidermidis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Winter, Robert B.
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: EPH-Like TITLE OF INVENTION: Kinases NUMBER OF SEQUENCES: 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 769 LCCKVSDFGLTRLL 782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            35.9%;
Local Similarity 57.1%;
es 8; Conservation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 1840 Dehavi
CITY: Thousand Oaks
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6 LCTKVLDFGIDKLI 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    91320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           984 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  E: Amgen Patent Operations/RBW 1840 Dehavilland Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fox, Gary M.
                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EPH-Like Receptor Protein Tyrosine
                                 34.4%;
53.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PCT/US95/04681
              Score 44;
Pred. No.
5; Mismatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       س
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A-287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 46;
Pred. No.
                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                   DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 5;
                1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 984;
                                                 Length 148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                  Indels
                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                0,:
                                                                                                   RESULT 14
US-07-857-224B-55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 13
US-07-857-224B-54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                          В
                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                    US-07-857-224B-54
            Sequence 55, Application US/07857224B Patent No. 5958784
GENERAL INFORMATION:
APPLICANT: Benner, Steven A.
TITLE OF INVENTION: Predicting Fo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 54, Application US/07857224B Patent No. 5958784
                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEX: none INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: Apple MacIntosh 7.0 OPERATING SYSTEM: MacIntosh 7.0 SOFTWARE: Microsoft Word CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/857,224B FILING DATE: 03/25/92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURE: Protein kinase PUBLICATION INFORMATION: AUTHORS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 436
PRIOR APPLICATION DATA: none
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM: MEDIUM TYPE: 3.5 inch diskette, 1.4 Mb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE:
DESCRIPTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                         133 TLSCKIADFGLARLIE 148
                                                                                                                                                                                                                                                                                                                                                                  JOURNAL: SCA
                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS: Hanks, S. K.
AUTHORS: Quinn, A. M.
AUTHORS: Hunter, T.
TITLE: The protein kinase family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: human
ATURE: Protein kinase; Table 8 Column
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE: (International) 41 1 262 2437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY: Switzerland ZIP: (note: this is an international post code) CH-8092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: Zurich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 48 DLGIDQLVKIIKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12 DFGIDKLIQLIED
                                                                                                                                                                                                                                                                                                                                     PAGES: 42-52
DATE: 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                          5 TLCTKVLDFGIDKLIQ 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
GY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            none
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hadlaubstrasse 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Benner, Steven A.
                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                        Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Steven A. Benner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (International) 41 1 632 2830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                               34.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Predicting Folded Structures of Proteins
            Predicting Folded Structures of Proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            54:
                                                                                                                                                                                                                                                               Score 44; DB Pred. No. 28;
                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                 Length 259
                                                                                                                                                                                                                                              Indels
```

0;

Gaps

NUMBER OF SEQUENCES: 114
CORRESPONDENCE ADDRESS:
ADDRESSEE: Steven A. Benner
STREET: Hadlaubstrasse 151

CITY: Zurich

none

Switzerland

```
; JOURNAL: SCIENT ; VOLUME: 241 ; PAGES: 42-52 ; DATE: 1988 US-07-857-2248-55
                                                                                                                                                                                                                                                                                           RESULT 15
US-09-457-040B-41
Sequence 41, Application US/09457040B
Patent No. 6387641
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: (Internationa.
TELEYAX: (Internationa.
TELEX: none
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 259
TYPE: amino
                                                        CURRENT APPLICATION NUMBER: US/09/457,040B
CURRENT FILING DATE: 1999-12-08
NUMBER OF SEQ ID NOS: 41
SOFTWARE: Patentin version 3.0
SEO ID NO 41
LENGTH: 271
TYPE: PRT
ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 34.4%;
Best Local Similarity 50.0%;
Matches 8; Conservative
                                                                                                                                                                                                               APPLICANT: Vertex Pharmaceuticals Incorporated APPLICANT: Bellon, Steve TITLE OF INVENTION: Crystallized P38 Complexes FILE REFERENCE: VPI/98-14
FEATURE:
NAME/KEY: misc_feature
OTHER INFORMATION: x=tyrosine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA: none TELECOMMUNICATION INFORMATION: TELEPHONE: (International)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: APPLE MACINTOSH 7.0
OPERATING SYSTEM: MACINTOSH 7.0
SOFTWARE: Microsoft Word
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM: MEDIUM TYPE: 3.5 inch diskette, 1.4 Mb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                    133 TLSCKIADFGLARLIE 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PUBLICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS: Hanks, S. K.
AUTHORS: Quinn, A. M.
AUTHORS: Hunter, T.
TITLE: The protein kinase family
JOURNAL: Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: mouse
ATURE: Protein kinase; Table 8 Column 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 03
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/07/857,224B
FILING DATE: 03/25/92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DESCRIPTION: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                      5 TLCTKVLDFGIDKLIQ 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (note: this is an international post code) CH-8092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (International) 41 1 632 2830 (International) 41 1 262 2437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 44; DB
Pred. No. 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 259;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

0

Search completed: May 9, 2003, 16:19:29 Job time: 11.7941 secs

GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.

```
Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                     Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                           DB
                                                                                                                                                                                                                                                                                                                                                                                                         seq length: 0 seq length: 2000000000
      11111087654321
43210.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    мау
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           349150 seqs, 92025710 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-851-422A-8
128
1 GFIATLCTKYLDFGIDKLIQLIEDKXX 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                     Published_Applications_AA: *
                                                                                                                                                                                                   /cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/US06_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9, 2003, 16:15:46; Search time 11.3824 Seconds
                                                                                                /cgn2_6/ptodata/2/pubpaa/PCTUS_PUBCOMB.pep:*
/cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*
/cgn2_6/ptodata/2/pubpaa/US09_NEW_PUB.pep:*
                                                                                                                                                               /cgn2_6/ptodata/2/pubpaa/US07
/cgn2_6/ptodata/2/pubpaa/US09_PUBCOMB.pep:*
/cgn2_6/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/US60_NEW_PUB.pep:*
/cgn2_6/ptodata/2/pubpaa/US60_PUBCOMB.pep:*
                                                                                                                                                                                cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            218.294 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (without alignments)
```

and is derived by analysis of the total score distribution. Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed.

SUMMARIES

Result

esult No.	Score 50	Query Match		9 B	ID 	Description
21	50	39.1	499	91	US-09-977-261-19	Sequence
ω	50	39.1	499	10	US-09-977-269-19	Sequence 19
4.	49	38.3	205	9	US-10-101-464A-492	Sequence 492
ر.	46	35.9	54	9	US-09-158-722-41	Sequence 41,
φ	46	35.9	131	10	US-09-881-752A-326	
7	46	35.9	161	ø	US-10-101-464A-729	Sequence 729,
œ	46	35.9	717	10	US-09-801-368-376	
9	45	35.2	454	10	US-09-771-161A-95	Sequence 95,
10	4 5	35.2	485	10	US-09-741-669-299	
11	45	35.2	505	10	US-09-771-161A-186	
12	45	35.2	827	9	US-10-101-464A-915	Sequence 915
13	44	34.4	122	9	US-10-101-464A-712	Sequence 712
14	. 44	34.4	346	10	US-09-870-962-3	
15	44	34.4	509	9	US-09-977-260-18	Sequence
16	44	34.4	509	9	US-09-977-261-18	Sequence
17	44	34.4	509	10	US-09-977-269-18	
18	44	34.4	1033	9	US-10-127-516-2	Sequence 2,
19	44	34.4	1033	9	US-10-027-629-2	Sequence 2, App

45	44	43	42	41	40	39	38	37	36	35	34	ω W	32	31	30	29	28	27	26	25	24	23	22	21	20
40	40.5	40.5	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	42.5	43	43	43	43	43	43	43
31.2	•		•			32.0				•								•		•	•		•	•	•
119	331	192	3801	3672	928	505	505	505	188	154	724	675	675	675	675	626	172	423	1124	984	968	674	347	309	169
10	10	9	10	10	9	10	9	9	9	9	9	10	9	9	9	9	10	9	10	9	9	9	10	ø	ø
US-09-815-242-11367	US-09-033-525-2	US-10-101-482-13	US-09-927-668-10	US-09-927-668-12	US-10-108-605-261	US-09-977-269-17	US-09-977-261-17	US-09-977-260-17	US-09-738-626-5200	US-09-252-088-2	US-09-881-579-4	US-09-977-269-4	US-09-977-261-4	US-09-977-260-4	US-10-186-399-3	US-09-712-363-151	US-09-810-264-26	US-09-738-626-6367	US-09-771-161A-199	US-10-101-464A-919	US-10-101-464A-76	US-10-086-464-14	US-09-815-242-10754	US-10-101-464A-602	US-10-101-464A-562
Sequence 11367, A	Sequence 2, Appli	Sequence 13, Appl	Sequence 10, Appl	Sequence 12, Appl	Sequence 261, App	Sequence 17, Appl	Sequence 17, Appl	Sequence 17, Appl	Sequence 5200, Ap	Sequence 2, Appli	Sequence 4, Appli	Sequence 4, Appli	Sequence 4, Appli	Sequence 4, Appli	Sequence 3, Appli	Sequence 151, App	Sequence 26, Appl	Sequence 6367, Ap	Sequence 199, App	Sequence 919, App	Sequence 76, Appl	Sequence 14, Appl	Sequence 10754, A	Sequence 602, App	Sequence 562, App

ALIGNMENTS

```
RESULT 2
US-09-977-261-19
                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                          ; ORGANISM: Mus sp. US-09-977-260-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-977-260-19
Sequence 19, Application US/09977260
Diblication No. US20020192790A1
GENERAL INFORMATION:
                 Sequence 19, Application US/09977261

Publication No. US20030054527A1

GENERAL INFORMATION:
APPLICANT: ULLRICH, AXEL
APPLICANT: GISHIZKY, MIKHAIL
APPLICANT: SURES, IRMINGARD
TITLE OF INVENTION: NOVEL MEGAKARYOCYTIC PROTEIN TYROSINE KINASES
FILE REFERENCE: 038602/1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: 08/232,545
PRIOR EILING DATE: 1994-04-22
NUMBER OF SEQ ID NOS: 24
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 19
LENGTH: 499
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                  Best
                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: ULLRICH, AXEL
APPLICANT: GISHIZKY, MIKHAIL
APPLICANT: SURES, IRMINGARD
TITLE OF INVENTION: NOVEL MEGAKARYOCYTIC PROTEIN TYROSINE KINASES
FILE REFERENCE: 038602/1260
CURRENT APPLICATION NUMBER: US/09/977,260
CURRENT FILING DATE: 2001-10-16
CURRENT APPLICATION NUMBER: US/09/977,261
                                                                                                                                                                                                                                                                      5 TLCTKVLDFGIDKLI 19
||| |: |||: ::|
365 TLCCKIADFGLARII 379
                                                                                                                                                                                                                                                                                                                                                            Local Similarity hes 8; Conserv.
                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                               39.1%;
53.3%;
                                                                                                                                                                                                                                                                                                                                                                               Score 50; DB Pred. No. 8.8;
                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                     DB 9;
                                                                                                                                                                                                                                                                                                                                                            3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                   Length 499;
                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                            Gaps
```

CURRENT FILING DATE: 2001-10-16
PRIOR APPLICATION NUMBER: 08/232,545
PRIOR FILING DATE: 1994-04-22
NUMBER OF SEQ ID NOS: 24

0

```
PRIOR APPLICATION NUMBER: 08/232,545
PRIOR FILING DATE: 1994-04-22
NUMBER OF SEQ ID NOS: 24
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 19
LENGTH: 499
TYPE: PRT
ORGANISM: Mus sp.
US-09-977-269-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 3
US-09-977-269-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                   US-10-101-464A-492 
; Sequence 492, Application US/10101464A 
; Publication No. US20030046728A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; ORGANISM: Mus sp.
US-09-977-261-19
                                  CURRENT APPLICATION NUMBER: US/10/101,464A
CURRENT FILING DATE: 2002-03-18
PRIOR APPLICATION NUMBER: 09/704,302
PRIOR FILING DATE: 2000-11-01
PRIOR APPLICATION NUMBER: 09/228,986
PRIOR FILING DATE: 1999-01-12
PRIOR PRIOR FILING DATE: 1999-01-12
PRIOR FILING DATE: 1999-11-01
PRIOR FILING DATE: 1999-11-01
PRIOR FILING DATE: 1999-11-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 19
LENGTH: 499
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 19, Application US/09977269 Patent No. US20020082037A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: ULLRICH, AXEL
APPLICANT: GISHIXKY, MIKHAIL
APPLICANT: SURES, IRMINGARD
TITLE OF INVENTION: NOVEL MEGAKARYOCYTIC PROTEIN TYROSINE KINASES
FILE REFERENCE: 038602/1260
                                                                                                                                                                                         APPLICANT: Nieuwenhuizen, Nicolaas
APPLICANT: Higgins, Colleen M.
TITLE OF INVENTION: Compositions Isolated from Plant Cells
TITLE OF INVENTION: and Their Use in the Modification of Plant Cell Signaling
FILE REFERENCE: 11000.1020c2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/977, 269
CURRENT FILING DATE: 2001-10-16
                                                                                                                                                                                                                                                                                              APPLICANT: Strabala, Timothy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             365 TLCCKIADFGLARII 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                      365 TLCCKIADFGLARII 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity 53...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity 53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŭ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5 TLCTKVLDFGIDKLI 19
APPLICATION NUMBER: PCT/US00/00724 FILING DATE: 2000-01-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TLCTKVLDFGIDKLI 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001-10-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          39.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  39.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 50; DB Pred. No. 8.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 50; DB 9; Pred. No. 8.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 499;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
```

```
Query Match
Best Local Similarity
"""" 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Eucalyptus grandis
US-10-101-464A-492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
US-09-158-722-41
밁
                                                                                                                  US-09-158-722-41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 41, Application US/09158722 Publication No. US20030013848A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 492
                                                         Matches
                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                        FILING DATE: 02-MAY-1994
PRIOR APPLICATION DATA:
APPLICATION UNMBER: US 07/884
FILING DATE: 15-MAY-1992
ATTORREY/AGENT INFORMATION:
NAME: Wetherell Ph.D. John F
REGISTRATION NUMBER: 31,678
                                                                                                                                                                                                                   TELEFAX: (619) 678-5099
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C
                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 54 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                              MOLECULE TYPE:
                                                                                                                                                                                                                                                  TELECOMMUNICATION INFORMATION: TELEPHONE: (619) 678-5070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                      86 AEFCPKVADFGLAKLV 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: La Jolla
STATE: CA
                                                                                                                                             STRANDEDNESS:
TOPOLOGY: Lir
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET:
                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity es 8; Conserv
æ
                           6 LCTKVLDFGIDKLI 19
LCCKVSDFGLTRLL 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              92037
                                                                                                                                                                          amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4225 Executive Square, Suite 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lemke Ph.D. et al., Greg E.
ENTION: PROTEIN-TYROSINE KINASE GENES
                                                                                                                                                                                                                                                                                                                                       UMBER: US 07/884,486
15-MAY-1992
                                                                                                                                protein
                                                                                                                                                         not relevant
                                                                      35.9%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 38.3%;
                                                                                                                                                                                                                                                                                                                                                                                                 US 08/237,401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US/09/158,722
                                                                                                                                                                                                                                                                                                                                                                                                                             US 08/456,647
                                                                                                                                                                                                                        41:
                                                                                                                                                                                                                                                                                                            John R.
                                                                                                                                                                                                                                                                               07251/007002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 49; DB
Pred. No. 4.6;
                                                                      Score 46; DB
Pred. No. 2.9;
                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Version #1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 205;
                                                                                      Length 54;
                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                         Gaps
```

```
밁
 밁
                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TYPE; PRT
; ORGANISM: Helicobacter pylori
US-09-881-752A-326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-881-752A-326
                                                                                                                                                  US-10-101-464A-729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: US 08/833,457
PRIOR FILING DATE: 1997-04-01
NUMBER OF SEQ ID NOS: 370
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 326
LENGTH: 131
                                                                                                                                                                                                                   SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 729, Application US/10101464A Publication No. US20030046728A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 326, Application US/09881752A Patent No. US20020115078A1
                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Nieuwenhuizen, Nicolaas
APPLICANT: Higgins, Colleen M.
TITLE OF INVENTION: Compositions Isolated from Plant Cells
TITLE OF INVENTION: and Their Use in the Modification of Plant Cell Signaling
FILE REFERENCE: 11000.1020c2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/09/881,752A CURRENT FILING DATE: 2001-06-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: Identification of Polynucleotides TITLE OF INVENTION: Encoding No. US20020115078A1e1 H
                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: 09/228,986 PRIOR FILING DATE: 1999-01-12
                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/10/101,464A
CURRENT FILLING DATE: 2002-03-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Kleanthous, Harold APPLICANT: Al-Garawi, Amal
                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: PCT/US00/00724
PRIOR FILING DATE: 2000-01-11
                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: 09/704,302 PRIOR FILING DATE: 2000-11-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Strabala, Timothy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: Genome FILE REFERENCE: 06132/041002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                 LENGTH: 161
TYPE: PRT
ORGANISM: Pinus radiata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20 LDYGIDKTLELKKDE 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11 LDFGIDKLIQLIEDK 25
85 SNFCPKVADFGLAKLL 100
                                                                          Local Similarity
les 8; Conserv
                                   4 ATLCTKVLDFGIDKLI 19
                                                                                                                                                                                                                                                                                                                     FILING DATE: 1999-11-01
                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity 53.: 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oomen, Raymond P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tomb, Jean-Francois
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Miller, Charles
                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     35.9%;
53.3%;
                                                                                          35.9%;
50.0%;
                                                                                                                                                                                                                                                                                                                                         60/162,866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 46;
Pred. No.
                                                                                                            Score 46;
                                                                                          Pred. No.
                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                      10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 10; Length 131;
                                                                                                              9;
                                                                                                            Length 161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Helicobacter Polypeptides in the
                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                         0;
```

```
APPLICANT: LEVINE, et al.
TITLE OF INVENTION: VARIANTS OF PROTEIN KINASES
FILE REFERENCE: 802620-2005.1
CURRENT APPLICATION NUMBER: US/09/771,161A
CURRENT FILING DATE: 2001-01-26
PRIOR APPLICATION NUMBER: 09/724,676
PRIOR FILING DATE: 2000-11-28
PRIOR FILING DATE: 2000-11-28
PRIOR APPLICATION NUMBER: 136776
PRIOR APPLICATION NUMBER: 135619
PRIOR FILING DATE: 2000-06-15
PRIOR FILING DATE: 2000-04-12
NUMBER: DE SEO 175 NOS: 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-771-161A-95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; ORGANISM: Saccharomyces cerevisiae US-09-801-368-376
                                                                             US-09-771-161A-95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-801-368-376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn version 3.0 SEQ ID NO 376 LENGTH: 717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                     SOFTWARE: POSEQ ID NO 95
                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 95, Application US/09771161A Patent No. US20020110811A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 35.9%; Score 46; Best Local Similarity 42.1%; Pred. No. Matches 8; Conservative 3; Mismat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 376, Application US/09801368 Patent No. US20020128250A1
Best Local Similarity Matches . 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/801,368
CURRENT FILING DATE: 2001-03-07
PRIOR APPLICATION NUMBER: US 09/487,558
PRIOR FILING DATE: 2000-01-19
PRIOR APPLICATION NUMBER: US 60/160,587
PRIOR FILING DATE: 1999-10-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Summers, Eric TITLE OF INVENTION: Methods for Improving Secondary Metabolite Production in Fungieric Reference: 109272.147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Busby, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS: 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                           NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                               LENGTH: 454
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: PRT
                                                                                               ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 592 CVKITDFGISKKLSPLNKK 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7 CTKVLDFGIDKLIQLIEDK 25
                                                                                                                                                                         PatentIn version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Maxon, Mary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sherman, Amir
Silva, Jeff
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Salama, Sofie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Milne, Todd
No. US20020128250Alman, Thea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Madden, Kevin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cali, Brian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Royer, John
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Holtzman, Doug
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hecht, Peter
 Conservative
                   35.2%;
                   Score 45;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . 56;
                     48;
                                       DB
                                       10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 717;
                                   Length 454;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
 0,
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

6 LCTKVLDFGIDKLI 19

8

321 LCCKIADFGLARII

```
SOFTWARE: FastSEQ for Window SEQ ID NO 299
LENCTH: 485
TYPE: PRT
ORGANISM: Escherichia coli
US-09-741-669-299
                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: 09/724,676
PRIOR FILING DATE: 2000-11-28
PRIOR APPLICATION NUMBER: 136776
PRIOR APPLICATION NUMBER: 135619
PRIOR APPLICATION NUMBER: 135619
PRIOR APPLICATION NUMBER: 135619
PRIOR FILING DATE: 2000-04-12
NUMBER OF SEQ ID NOS: 273
SOFTMARE: PREENTIN VERSION 3.0
SEQ ID NO 186
LENGTH: 505
RESULT 12

US-10-101-464A-915

; Sequence 915, Application US/10101464A

; Publication No. US20030046728A1

; GENERAL INFORMATION:
                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                 ; ORGANISM: Homo sapiens US-09-771-161A-186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 10
US-09-741-669-299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-771-161A-186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION: APPLICANT: LEVINE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 299, Application US/09741669 Patent No. US20020022718A1
                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 186, Application US/09771161A Patent No. US20020110811A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: VARIANTS OF PROTEIN KINASES FILE REFERENCE: 802620-2005.1 CURRENT APPLICATION NUMBER: US/09/771,161A CURRENT FILING DATE: 2001-01-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Ohlsen, Kari L.
APPLICANT: Zyskind, Judith W.
TITLE OF INVENTION: Genes identified as required
TITLE OF INVENTION: proliferation of E. coli
FILE REFERENCE: ELITRA.009A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQ ID NOS: 481
COSTMARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/741,669
CURRENT FILING DATE: 2000-12-19
                                                                                                                                                                                                                                                                                                                     LENGTH: 50
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER:
                                                                                                                                  372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240 GYIASLCLGMVDFSSMRNLPLI 261
                                                                                                                                                                                                        Local Similarity 50.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GFIATLCTKVLDFGIDKLIQLI 22
                                                                                                                                                                    6 LCTKVLDFGIDKLI 19
                                                                                                                              II 1: |||: ::|
LCCKIADFGLARII 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Forsyth, R. Allyn
Ohlsen, Kari L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             et al.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1999-12-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    35.2%;
40.9%;
                                                                                                                                                                                                                         35.2%;
50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2001-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           us 60/173005
                                                                                                                                                                                                      Score 45; DB
Pred. No. 54;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 45; DB Pred. No. 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                             DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10;
                                                                                                                                                                                                                                           Length 505;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 485;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

RESULT 14 US-09-870-962-3

```
RESULT 13
US-10-101-464A-712
; Sequence 712, Application US/10101464A
C14-Aprican No. US20030046728A1
  B
                                         δõ
                                                                                                                                                                                    NUMBER OF SEQ ID NOS: 989
SOFTWARE: FASUSEQ for Wind
SEQ ID NO 712
SEQ ID NO 712
LENGTH: 122
TYPE: PRT
ORGANISM: Pinus radiata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                     US-10-101-464A-712
                                                                                                                                                                                                                                                                                                                                                 FILE REFERENCE: 11000.1020c2

CURRENT APPLICATION NUMBER: US/10/101,464A

CURRENT FILING DATE: 2002-03-18

PRIOR APPLICATION NUMBER: 09/704,302

PRIOR FILING DATE: 2000-11-01

PRIOR APPLICATION NUMBER: 09/228,986

PRIOR PILING DATE: 1999-01-12

PRIOR PILING DATE: 1999-01-12

PRIOR APPLICATION NUMBER: 60/162,866

PRIOR APPLICATION NUMBER: 60/162,866

PRIOR FILING DATE: 1999-11-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-101-464A-915
                                                                            Query Match
Best Local Similarity
Matches 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Strabala, Timothy APPLICANT: Nieuwenhuizen, N APPLICANT: Higgins, Colleen
                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: PRIOR FILING DATE: 2000-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Higgins, Colleen M.
TITLE OF INVENTION: Compositions Isolated from Plant Cells
TITLE OF INVENTION: and Their Use in the Modification of Plant Cell Signaling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: 09/704,302
PRIOR FILING DATE: 2000-11-01
PRIOR APPLICATION NUMBER: 09/228,986
PRIOR FILING DATE: 1999-01-12
PRIOR APPLICATION NUMBER: 60/162,866
PRIOR FILING DATE: 1999-11-01
PRIOR APPLICATION NUMBER: PCT/US00/00724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 82
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR FILING DATE: 2000-01-11
NUMBER OF SEQ ID NOS: 989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/10/101,464A CURRENT FILING DATE: 2002-03-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: Compositions Isolated from Plant Cells TITLE OF INVENTION: and Their Use in the Modification of Plant Cell Signaling FILE REFERENCE: 11000.1020c2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Strabala, Timothy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Eucalyptus grandis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    629 AEFCPEVADFGLAKLV 644
90 ADMEARVADFGVAKLIQTDE 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity es 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4 ATLCTKVLDFGIDKLI 19
                                       4 ATLCTKVLDFGIDKLIQLIE 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nieuwenhuizen, Nicolaas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nieuwenhuizen, Nicolaas
                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                       for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                  2000-01-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Colleen M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        35.2%;
                                                                                                      34.48;
                                                                                                                                                                                                                                                                                                                                      PCT/US00/00724
                                                                                                      Score 44; DB Pred. No. 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 45; DB
Pred. No. 94;
                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                  7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 827;
                                                                                                                       Length 122;
                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
APPLICANT: ULLRICH, AXEL

APPLICANT: GISHIZKY, MIXHAIL

APPLICANT: SURES, IRMINGARD

TITLE OF INVENTION: NOVEL MEGAKARYOCYTIC PROTEIN TYROSINE KINASES

FILE REFERENCE: 038602/1260

CURRENT APPLICATION NUMBER: US/09/977,260

CURRENT FILING DATE: 2001-10-16

PRIOR APPLICATION NUMBER: 08/232,545

PRIOR FILING DATE: 1994-04-22

NUMBER OF SEQ ID NOS: 24

SOFTWARE: PATENTIN PATENT PATENTIN PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; SEQ ID NO 3;
; LENGTH: 346
; TYPE: PRT
; ORGANISM: Homo sapiens
; FEATURE:
; OTHER INFORMATION: 507669
US-09-870-962-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 15
US-09-977-260-18
; Sequence 18, Application US/09977260
; Publication No. US20020192790A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δõ
Search completed: May 9, 2003, 16:20:18 Job time : 12.3824 secs . .
                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Lu, Aina
TILLE OF INVENTION: Protein Kinase Homologs
FILE REFERENCE: PF-0614 US
CURRENT APPLICATION NUMBER: US/09/870,962
CURRENT FILING DATE: 2001-05-30
PRIOR APPLICATION NUMBER: 09/420,915
PRIOR FILING DATE: 1999-10-20
PRIOR APPLICATION NUMBER: US 09/173,581
PRIOR FILING DATE: 1998-10-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3, Application US/09870962
Patent No. US20020081290A1
                                                                                                                                                                                                                                                                                                                 Query Match 34.4%;
Best Local Similarity 50.0%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 34.4%;
Best Local Similarity 50.0%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Tang, Y Tom
APPLICANT: Hillman, Jennifer L.
APPLICANT: Yue, Henry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PERL Program
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Bandman, Olga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5 TLCTKVLDFGIDKLIQ 20
|| |: |||: :||:
212 TLSCKIADFGLARLIE 227
                                                                                                                                                        5 TLCTKVLDFGIDKLIQ 20
|| |: |||: :||:
375 TLSCKIADFGLARLIE 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Yue, Henry
Guegler, Karl J.
Corley, Neil C.
Gorgone, Gina
Azimzai, Yalda
                                                                                                                                                                                                                                                                                                                 Score 44; DB 9; Length 509; Pred. No. 77; 4; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 44; DB 10; Length 346;
Pred. No. 50;
4; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>...'</u>
                                                                                                                                                                                                                                                                                                                     0
```

THIS PAGE BLANK (USPTO)

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                             Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                            Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                 Score
                            42.5
42.5
42
                                                                                                                                                                                                                                                                                                 Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   May 9, 2003, 16:08:20; Search time 8.73529 Seconds (without alignments) 128.200 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        112892 seqs, 41476328 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-851-422A-8
128
1 GFIATLCTKVLDFGIDKLIQLIEDKXX 27
  98.4
97.7
68.0
59.4
42.2
                                                                                                                                                                                                                                                                                                                                                                            SwissProt_40:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
  DВ
ETIL_YEAST
ETAL_HUMAN
Y390_MYCPN
YXEQ_BACSU
YXEQ_BACSU
YXFQ_ECOLI
BLK_HUMAN
GRAD_TREPA
PRS2_METTH
YY07_METJA
YY55L_YEAST
Y829_BRUME
LCK_HUMAN
LCK_MOUSE
NALL2_HUMAN
LCK_MOUSE
NALL2_HUMAN
LCK_MOUSE
NALL2_HUMAN
Y052_HUMAN
LCK_HUMAN
LCK_HUMAN
Y072_HUMAN
HOA_CORGLL
SECE_STACA
                                                                                                                                                                                 PRIM_HELPY
PRIM_HELPY
VG33_HSV11
GCP_METJA
                                                                                                                                                                                                                           PFPN_ENTHI
PFPB_ENTHI
PFPC_ENTHI
SPKA_SYNY3
OBP_VZVD
BLK_MOUSE
                                                                                                                                                                                                                                                                                                 IJ
                                                                                                                                                                                                                                                                               PFPA_ENTH
                                                                                                                                                                                                                     LCK_CHICK
                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                       112892
         P06240
Q9nx02
P50054
Q11137
P52333
O15360
Q57655
P46395
                                                                                                     Q46815
P51451
O83062
O27092
Q60306
                                                                                                                                               P23561
P21709
P75207
P54956
                                                                                                                                                                                 Q00118
Q58530
                                                                                                                                                                                                   P42683
Q9zn49
P56064
                                                                                                                                                                                                                            P09299
P16277
                                                                                                                                                                                                                                                    Q24824
Q24825
                                                                                                                                                                                                                                                                      P34095 entamoeba
Q07831 entamoeba
                                                                                                                                                                                                                                                                                                Description
homo sapien
homo sapien
methanococc
corynebacte
staphylococ
                                                                                                    y homo sapien
y mycoplasma
bacillus su
sescherichia
homo sapien
treponema p
methanobact
methanococc
                                         saccharomyc brucella me homo sapien mus musculu homo sapien rickettsia proteus mir
                                                                                                                                                                                         gallus gall
helicobacte
helicobacte
ictalurid h
                                                                                                                                                                                                                                                    entamoeba h
entamoeba h
entamoeba h
                                                                                                                                                                                                                                   synechocyst
varicella-z
                                                                                                                                                                        saccharomyc
                                                                                                                                                                                  methanococc
                                                                                                                                                                                                                            mus musculu
```

42 32.8 163 ATPX_OCHNE 42 32.8 395 1 METC_ECOLI 42 32.8 503 1 HCK_RAT 42 32.8 504 1 HCK_MACFA 42 32.8 504 1 HCK_MOUSE 42 32.8 626 1 PKNB_MYCTU 42 32.8 626 1 PKNB_MYCTU 42 32.8 626 1 PKNB_MYCTU 42 32.8 675 1 BMX_HUMAN 42 32.8 693 1 PKNL_MYXXA 42 32.8 693 1 PKNL_SCHPO 42 32.8 766 1 V1A_BBMY 42 32.8 1100 1 JAK3_BAT	32.8 395 32.8 503 1 32.8 504 1 32.8 524 1 32.8 622 1 32.8 626 1 32.8 675 1 32.8 675 1 32.8 766 1 32.8 1966 1 32.8 1966 1	45	44	43	42	41	40	99	38	37	36	33 5	34
163 395 503 504 622 622 626 675 1766 1100	163 1 ATPX_OCHNE Q40608 395 1 METC_ECOLI P66721 503 1 HCK_RAT P50545 504 1 HCK_MACFA Q95m30 524 1 HCK_MOUSE P08103 524 1 HCK_MOUSE P08103 622 1 PKNB_MYCLE P54744 626 1 PKNB_MYCLE P51584 627 1 PKNB_MYCLE P51813 603 1 PKNI_MYXXA P51813 766 1 QAPI_SCHPO 966 1 VIA_BBMY Q603772 1100 1 JAK3_RAT Q63377	42	42	42	42	42	42	42	42	42	42	42	42
	1 ATPX_OCHNE Q40608 1 METC_ECCLI P06721 1 HCK_RAT P50545 1 HCK_MACFA 095m30 1 HCK_MOUSE P08103 1 PKNB_MYCLE P11584 1 PKNB_MYCLE P11584 1 PKNB_MYCTU P115813 1 PKNL_MYXXA P33973 1 PKNL_MYXXA P33973 1 QAP1_SCHPO P32277 1 V1A_BBMV Q633772	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8
1 ATPX_OCHNE 1 METC_ECOLI 1 HCK_RAT 1 HCK_MACFA 1 HCK_MOUSE 1 PKNB_MYCLE 1 PKNB_MYCLU 1 BMX_HUMAN 1 PKN1_MYXXA 1 PKN1_MYXXA 1 GAP1_SCHPO 1 V1A_BBMV 1 JAK3_RAT	0,40608 P06721 P050545 095m30 P08103 P081744 P715813 P51813 P33277 000020 Q632772	1100	966	766	693	675	626	622	524	504	503	395	163
ATPX_OCHNE METC_ECOLI HCK_RAT HCK_MOUSE HCK_MOUSE PKNB_MYCLE PKNB_MYCTU BMX_HUMAN PKNL_MYXXA GAP1_SCHPO VIA_BBMV VIA_BBMV VIA_BBMV VIA_BRAT	0,40608 P06721 P050545 095m30 P08103 P081744 P715813 P51813 P33277 000020 Q632772	_	_	_	1	Ь	_	ш	ب	_	Н	-	Н
		JAK3_RAT	V1A_BBMV	GAP1_SCHPO	PKN1_MYXXA	BMX_HUMAN	PKNB_MYCTU	PKNB_MYCLE	HCK_MOUSE	HCK_MACFA	HCK_RAT	METC_ECOLI	ATPX_OCHNE

ALIGNMENTS

00000	888888	RT RT	RA RA RA	R R R R R R R R R R R R R R R R R R R	R R R R R R R R R R R R R R R R R R R	RE DT DT DT OCC
000000	aaaaaa	CHHHDXOA:	Z T H D D X T Z	: PHHDXOP2	Z T H H D X X C T :	PA_
opyright. It is produced thro te of Bioinformatics and the s Institute. There are no retutions as long as its contect is not removed. Usage by a agreement (See http://www.ie		TIAL SEQUENCE. AIN=HM-1:IMSS; LINE=95231296; PPE M., Andrae oebapores, a f nules of Entam e formation in Microbiol. 1	SEQUENCE OF 22-46. MEDLINE-91352048; PubMed-1881907; Leippe M., Ebel S., Schoenberger O.L., Horstmann R.D., Mueller-Eberhard H.J.; "Pore-forming peptide of pathogenic Entamoeba histolytica."; "Proc. Natl. Acad. Sci. U.S.A. 88:7659-7663(1991).	SEQUENCE FROM N.A. STRAIN-HM-1:IMSS; MEDLINE-94099992; PubMed-8274224; Bruchhaus I., Leippe M., Lioutas C., Tannich E.; "Unusual gene organization in the protozoan parasite Entamoeba histolytica."; DNA Cell Biol. 12:925-933(1993).	SEQUENCE FROM N.A., AND SEQUENCE OF 22-46. STRAIN-HM-1:MSS; MEDLINE-93010939; PubMed=1396552; Leippe M., Tannich E., Nickel R., van der Goot G., Pattus F., Leippe M., Mueller-Eberhard H.J.; "Primary and secondary structure of the pore-forming peptide of pathogenic Entamoeba histolytica."; EMBO J. 11:3501-3506(1992).	_ENTHI STANDARD; PRT; 98 AA. PFPA_ENTHI STANDARD; PRT; 98 AA. P34095; 024839; 01-FEB-1994 (Rel. 28, Created) 01-FEB-1994 (Rel. 28, Last sequence update) 16-OCT-2001 (Rel. 40, Last annotation update) Pore-forming peptide ameobapore A precursor (EH-APP). Entamoeba histolytica. Eukaryota; Entamoebidae; Entamoeba. MCBI_TaxID-5759;

```
PER RESULT TO SEE TO SE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PFPN_ENTHI

007831;

01-FEB-1995

01-FEB-1995
                                                                          CHAIN
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID
VARIANT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                     Leippe M., Bahr E., Tannich E., Horstmann R.D.;
"Comparison of pore-forming peptides from pathogenic and nonpathogenic antamoeba histolytica.";
MOL. Biochem. Parasitol. 59:101-110(1993).
-i- FUNCTION: FORMS PORE IN THE MEMBRANE OF HOST TISSUES. IMPLICATED IN THE CYTOLYTIC ACTIVITY OF THE PARASITE.
-i- SUBCELLULAR LOCATION: Cytoplasmic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID DISULFID
                                                                                                                                       Signal.
                                                            SEQUENCE
                                                                                                                                                                       SMART; SM00118;
                                                                                                                                                                                    EMBL; L04984; AAA18632.1; ~. InterPro; IPR000004; SapB.
                                                                                                                                                                                                                                                entitles requires a
                                                                                                                                                                                                                                                           the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for con
                                                                                                                                                                                                                                                                                                                           This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=93295428;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID-5759;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nonpathogenic pore-for Entamoeba histolytica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Signal; Antibiotic.
SIGNAL 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR000004; SapB SMART; SM00118; SAPB; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIR: S25283; S25283.
PIR: A41279; A41279.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; M83945; AAA29111.1; -. EMBL; X70851; CAA50203.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                        SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25; Conserv
                                                                                                                                                                                                                                an email to license@isb-sib.ch)
               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5 (Rel. 31, Creat
5 (Rel. 31, Last
1 (Rel. 40, Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Entamoebidae; Entamoeba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98
 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                            528521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1
22
26
29
56
71
                                                            AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pore-forming peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                    SAPB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PubMed-8515772;
                                                            20
97
97
91
66
10432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND
                                                                                                                                                                                                                                           license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21
98
98
92
71
              97.7%;
96.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .08;
                                                            MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                          NONPATHOGENIC POBY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
              Score 125; DB 1;
Pred. No. 4.4e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 126;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PORE-FORMING PEPTIDE AMEOBAPORE A. BY SIMILARITY. BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F. 7
                                                          AE171C58B86EE007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F9592FDC1FAC7FFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OF 21-34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3.1e-12;
hes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ⋛
                                                                                                                         PORE-FORMING PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (APNP).
0;
                                                            CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CRC64;
                           Length 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 98
Indels
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                             no
                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                           way
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                     RESULT 4
PFPC_ENTHI
ID PFPC_E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 3
                                                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                          Query Match
Best Local s
Matches 14
                                                                                                                                                                                                                                                                                                                                                                   DISULFID DISULFID DISULFID
                                                                                                                     Q24825;
01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                     PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SMART:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PFPB_ENTHI
                                                                                                                                                                                                                                59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                             <u>سر</u>
                                                                                                                                                     ENTHI
                                                                                                                                                                                                                                                                                                                                                        96
```

à

```
10-OCT-2001 (Rel. 40, Last annotation update)
Pore-forming peptide ameobapore C precursor
Entamoeba histolytica.
Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interventa; Entamo-interve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           U1-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Pore-forming peptide ameobapore B precursor (EH-APP).
Entamocba histolytica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Amoebapores, a family of membranolytic peptides from cytoplasmic granules of Entamoeba histolytica: isolation, primary structure, and pore formation in bacterial cytoplasmic membranes.";
Mol. Microbiol. 14:895-904(1994).

-!- FUNCTION: FORMS PORES IN THE CYTOPLASMIC MEMBRANE OF HOST CELLS.
-!- ANTIBACTERIAL ACTIVITY AGAINST M.LUTEUS, NO ACTIVITY AGAINST E.COLI. IMPLICATED IN THE CYTOLYTIC ACTIVITY OF THE PARASITE.
-!- SUBCELLULAR LOCATION: CYTOPLASMIC GRANULES.
-!- SINILARITY: CONTAINS 1 SAPOSIN B-TYPE DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by ancentities requires a license agreement (See http://www.isb-sentities.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Signal; Antibiotic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                      SEQUENCE FROM N.A.,
                                                                                                                            Eukaryota; Entamoebidae;
NCBI_TaxID=5759;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; X76904; CAAS4226.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-95231296;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-HM-1: IMSS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Entamoebidae; Entamoeba
NCBI_TaxID=5759;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Leippe M., Andrae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR000004; SapB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GFIATLCTKVLDFGIDKLIQLIED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GFIATLCTKVLDFGIDKLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GFLGTLCEKILSFGVDELVKLIEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SM00118; SAPB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20
24
27
54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PubMed-7715451;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10437
                                           AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ., Nickel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AND SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96
96
96
96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     68.0%;
58.3%;
                                      SEQUENCE OF 25-69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PORE-FORMING PEPTII
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
Construction of the property o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tannich E., Mueller-Eberhard H.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20-63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101
                                                                                                                                                                                                                                                                                                                  update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4e-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PEPTIDE
                                                                                                                                                                                                                                                                           (EH-APP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AMEOBAPORE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a collaboration .
MBL outstation .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       commercial
```

```
SPKA_SYNY3
ID SPKA_S
AC 09FAB3
DT 16-0CT
DT 15-JUN
DE Probab
GN SPKA O
OS Synech
OC Bacter
OX NCHIT
RN [1]
RN [1]
RN [1]
RN SEQUEN
RT MADAIL
RY SUBMILL
RY [2]
RP SEQUEN
RA KANEN
RA TABAET
RA TAB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
       "Sequence analysis of the genome of the unicellular cyanobacters."
Synechocystis sp. strain PCC6803. II. Sequence determination of tentire genome and assignment of potential protein-coding regions.
DNA Res. 3:109-136(1996).

-i- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.

-i- SIMILARITY: Def. 2 sequence differs from that shown due to a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     O9FAB3: P73208: P73209;
16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Probable serine/threonine-protein kinase A (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID DISULFID
                                                                                                                                                                                                      Kaneko T., Sato S., Kotani H., Tanaka A., Asamizu E., Nakamura Y., Miyajima N., Hirosawa M., Sugiura N., Sasamoto S., Kimura T., Hosouchi T., Matsuno A., Muraki A., Nakazaki N., Naruo K., Okumura Shimpo S., Takeuchi C., Wada T., Watanabe A., Yamada M., Yasuda M.
                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                  "A novel gene, spkA, encodes active Ser/Thr protein kinase motile cyanobacterium Synechocystis sp. PCC 6803."; Submitted (JUL-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Synechocystis sp. (strain PCC 6803). Bacteria; Cyanobacteria; Chroococcales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPKA_SYNY3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Signal; Antibiotic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SMART;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; X76904; CAA54225.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            modified and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Amoebapores, a family of membranolytic peptides from cytoplasmic granules of Entamoeba histolytica: isolation, primary structure,
                                                                                                                                                                                                                                                                                   Kaneko T., Sato S.,
                                                                                                                                                                                                                                                                                                          MEDLINE-97061201; PubMed-8905231;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Leippe M., Andrae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=95231296; PubMed=7715451;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MICRODIO1. 14:895-904(1994).

FUNCTION: FORMS PORES IN THE CYTOPLASMIC MEMBRANE OF HOST CELLS. HAS ANTIBACTERIAL ACTIVITY AGAINST M. LUTEUS, NO ACTIVITY AGAINST E. COLI. IMPLICATED IN THE CYTOLYTIC ACTIVITY OF THE PARASITE. SUBCELLULAR LOCATION: CYTOPLASMIC GRANULES.

SIMILARITY: CONTAINS 1 SAPOSIN B-TYPE DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GFIATLCTKVLDFGIDKLIQLI
| : | | | | | : : | | | | | | : |
GLVETLCTKIVSYGIDKLIEKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        formation in bacterial cytoplasmic membranes."; Microbiol. 14:895-904(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OR SLL1574/SLL1575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 Similarity
13; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SM00118; SAPB; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and this statement is not removed. Usage by and for commercial requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    non-profit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IPR000004; SapB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ikeuchi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         59
59
59
59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ą,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          J., Nickel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24
101
101
95
70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10855 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             59.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PORE-FORMING PEPTIDE A
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₩.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 76;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28AC72135E73499B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tannich E., Mueller-Eberhard H.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          521 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                            unicellular cyanobacterium equence determination of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Synechocystis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ,00012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2.7.1.-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AMEOBAPORE
                                                                                                    regions.";
                                                                                                                                                                                                                                                                                                                                                                                                                                       ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                            the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
RESULT 6
OBP_VZVD
TD OBP_VZVD
P09299;
11-MAR-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SO TITE
В
                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BINDING
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00069; pkinase; 1.
PRINTS; PR000109; TYRKINASE;
ProDom; PD000001; Euk_pkinase;
SMART; SM00220; S_TKC; 1.
SMART; SM00219; TYFKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS00107; PROTEIN_KINASE_ATP: 1
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOW; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; D90904; BAA17236.1; ALT_FRAME.
EMBL; D90904; BAA17235.1; ALT_FRAME.
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR0002290; Ser_thr_pkinase.
InterPro; IPR001245; Tyr_pkinase.
                                                                                                                    Davison A.J., Scott J.E.;
"The complete DNA sequence of varicella-zoster virus.";
J. Gen. Virol. 67:1759-1816(1986).
-i- FUNCTION: PROBABLY INVOLVED IN DNA REPLICATION. BIN
OF REPLICATION (ORI) (BY SIMILARITY).
                                                                                                                                                                                       SEQUENCE FROM N.A. MEDLINE=86306657; PubMed=3018124;
                                                                                                                                                                                                                                              Varicella-zoster virus (strain Dumas)
Viruses; dsDNA viruses, no RNA stage;
                                                                                                                                                                                                                                                                                            01-MAR-1989
01-OCT-1996
                                                                                                                                                                                                                                                                                                                  01-MAR-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AB046597; BAB17033.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or send an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN
                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration -
                                                                                                                                                                                                                        NCBI_TaxID=10338;
                                                                                                                                                                                                                                     Alphaherpesvirinae;
                                                                                                                                                                                                                                                                                Replication
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                167
                                                                                                                                                                                                                                                                                                                                                                                                                    9 KVLDFGIDKLIQLIED 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    European
                                                                                                                                                                                                                                                                                                                                                                                                KILDFGIAKLVQAAEE 182
                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
10; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             proteome.
15
21
45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          non-profit
                                                                                                            53, AND VZV 51.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       521 AA;
                                                                                                                                                                                                                                                                                            (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  148
                                                                                                                                                                                                                                                                                origin
                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0011; PROTEIN_KINASE_DOM; 1.
Serine/threonine-protein kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bioinformatics Institute. The profit institutions as long
                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                          10,
10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             289
29
45
                                                                                                                                                                                                                                                                                binding
                                                                                                                                                                                                                                       Varicellovirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       58874 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     42.2%;
                                                                                                                                                                                                                                                                                            Last sequence up
                                                                                                                                                                                                                                                                                protein
                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 54; DB Pred. No. 1.3; 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROTEIN KINASE
                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5FEC16F80D369C91 CRC64;
                                                                                                                                                                                                                                                                                 (OBP).
                                                                                                                                                                                                                                                                                            on update)
                                                                                                                                                                                                                                                                                                                                        835
                                                                                                                                                                                                                                               Herpesviridae;
                                                                                                                                                                                                                                                            (VZV).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       There are no restrictions ong as its content is in
                                                                                                                        GROUPS TOGETHER HSV-1 UL9
                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                        Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>ω</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 521;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                by
                                                                                                                                            BINDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL
                                                                                                                                            THE ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

use by non-profit institutions as long modified and this statement is not removed. entitles requires a license agreement (See or send an email to license@isb-sib.ch).

(See http://www.isb-sib.ch/announce/

There are no restrictions

as its content

Usage

bу and

for

n no way 9

the European Bioinformatics Institute.

the Swiss Institute of Bioinformatics

```
RESULT 7
BLK_MOUSE
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BLK_MOUSE
P16277;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dymecki S.M., Niederhuber J.E., Des "Specific expression of a tyrosine cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PIR: G27344; WZBE51.
InterPro; IPR003450; Herpes_ori_bp; 1.
Pfam; PF02399; Herpes_ori_bp; 1.
DNA replication; DNA-binding, ATP-binding, NP_BIND 67 74 ATP (POTENTIAL).
SEQUENCE 835 AA; 94374 MW; A71F5877ACF386FB
                                                                                                                                                                                                                                                                                                                       Biochemistry 35:6201-6211(1996).
-I- FUNCTION: BLK MAY FUNCTION IN A SIGNAL IS RESTRICTED TO B LYMPHOID CELLS.
-I- CATALYTIC ACTIVITY: ATP + a protein tyr
                     MGD; MGI:88169; Blk.
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR000980; SH2.
InterPro; IPR001452; SH3.
InterPro; IPR001245; Tyr_pkinase.
                                                                                                                                                      or send
                                                                                                                                                                entitles requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                              use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                        없
                                                                                                                                                                                                                                                                                                                                                                               p55blk kinase.";
                                                                                                                                                                                                                                                                                                                                                                                       Metzler W.J., Leiting B., Pryor K., Mueller L., I The three-dimensional solution structure of the
                                                                                                                                                                                                                                                                                                                                                                                                                                STRUCTURE BY NMR OF SH2 DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-90117147; PubMed-2404338;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-AuG-1990 (Rel. 15, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Tyrosine-protein kinase BLK (EC 2.7.1.112) (B lymphocyte
                                                                                                                                                                                                                                                                                                                                                                                                                  MEDI.INE-96224819; PubMed-8639560;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         225 GFSGRTCTILRDMGIDTLVRVIK 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GFIATLCTKVLDFGIDKLIQLIE
                                                                                                                                                                                          SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                          SIMILARITY: CONTAINS 1 SH2 DOMAIN. SIMILARITY: CONTAINS 1 SH3 DOMAIN.
                                                                                                                                                                                                                                                                                                 tyrosine phosphate.
SIMILARITY: BELONGS TO THE
                                                                                                                                                                                                                                                                                      SUBFAMILY.
                                                                                                              , M30903; AAA40453.1;
A40092; A40092.
                                                                                     1BLJ; 12-MAR-97.
1BLK; 12-MAR-97.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 43.:
10; Conservative
                                                                                                                                                       an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 53; DB Pred. No. 3; 5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; I
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                  TYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Desiderio
ine kinase
                                                                                                                                                                                                                                                                                                  FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BB
                                                                                                                                                                                                                                                                                                                           tyrosine - ADP +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S.V.;
gene, blk,
                                                                                                                                                                                                                                                                                                  Q.
                                                                                                                                                                                                                                                                                                                                                    TRANSDUCTION PATHWAY THAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
                                                                                                                                                                               Usage
                                                                                                                                                                                                                                                                                                 PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 835;
                                                                                                                                                                                                                                                                                                                                                                                       Farmer B.Ť.
e SH2 domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Euteleostomi; 
; Murinae; Mus
                                                                                                                                                                                                                                                                                                 KINASES. SRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B lymphoid
                                                                                                                                                                                                                                                                                                                           protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        kinase) (p55-
                                                                                                                                                                                                                                                                                                                                                                                         from
                                                                                                                                                                                 for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

```
ProDom; PD000053.

R SMART; SM00252; SH2; 1.

R SMART; SM00256; SH3; 1.

JR SMART; SM00219; TYPKC; 1.

JR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

DR PROSITE; PS00109; PROTEIN_KINASE_DOM; 1

DR PROSITE; PS50011; PROTEIN_KINASE_DOM; 1

DR PROSITE; PS50001; SH2; 1.

DR PROSITE; PS50002; SH3; 1.
    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OR FITTER WERE TO THE TENT OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LCK_CHICK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gallus gallus (Chicken).
Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galllformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LCK_CHICK P42683;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
DOMAIN
DOMAIN
BINDING
                                                                                                         "Additional member of the protein-tyrosine kinase and lck-related protooncogene c-tkl."; proc. Natl. Acad. Sci. U.S.A. 84:8778-8782(1987).
-i- FUNCTION: MAY PARTICIPATE IN ANTIGEN-INDUCED-
-i- CATALYTIC ACTIVITY: ATP + a protein tyrosine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Proto-oncogene tyrosine-protein kinase LCK (EC tyrosine kinase C-TKL).
                                                                                                                                                                                                                               Strebhardt K., Mullins J.I., Bruck C.,
                                                                                                                                                                                                                                                                                                                                                     kinase gene.
                                                                                                                                                                                                                                                                                                                                                                                                   Chow
                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 1-88 FROM MEDLINE-92186854; Pub.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ProDom;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ProDom;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00069; pkinase;
PRINTS; PR00401; SH2DOM;
PRINTS; PR00452; SH3DOM;
PRINTS; PR00109; TYRKIN;
                                                                                                                                                                                                                                                   MEDLINE-88097370;
                                                                                                                                                                                                                                                                             SEQUENCE OF 46-507 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         364 TLCCKTADFGLARII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ų
CD4 OR CD8.
SIMILARITY:
SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TS: PR00452; SH3DOMAIN.

HTS: PR00452; SH3DOMAIN.

HTS: PR00109; TYRKINASE: 0

TH: PD000001; Euk_Pkinase: 1

TH: PD000093; SH3; 1

TH: PD000093; SH2: 1
                                                                 tyrosine phosphate.
SUBCELLULAR LOCATION: BOUND TO THE CYTOPLASMIC DOMAIN OF EITHER
                                                                                                                                                                                                                                                                                                                                       L., Kalcii...
is the avian homolog
se gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TLCTKVLDFGIDKLI 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                              Ratcliffe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      117
234
240
262
353
382
498
                                                                                                                                                                                                                                                                                                                             Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Α.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            111
213
487
248
262
353
382
56513
                        BELONGS TO
                                                                                                                                                                                                                                                                                                                           12:1226-1233(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                      FROM N.A.
PubMed=1545804;
                                                                                                                                                                                                                                                     PubMed=3321053;
                                                                                                                                                                                                                                                                                                                                                                    M., Veillette A.; nomolog of the mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     39.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Phosphorylation; Transferase; ATP-binding; H3 domain; 3D-structure.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                               , O.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Μ¥.
                        THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 50; DB Pred. No. 5.1; 4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SH3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PHOSPHORYLATION (AUTO-)
BE49D7B079FDD577 CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROTEIN KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                        TYR FAMILY OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FALSE_NEG
                                                                                                                                                                                                       Ruebsamen-Waigmann
sine kinase family:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YB)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1:
                                                                                                                                                                                                                                                                                                                                                                         lck tyrosine protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY).
                        PROTEIN KINASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2.7.1.112) (Protein-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 498;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CRC64;
                                                                                                              T-CELL ACTIVATION
- ADP + protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIMILARITY)
                                                                                                                                                                                                          H.;
the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

SIMILARITY: CONTAINS SIMILARITY: CONTAINS

1 SH2 1 SH3

DOMAIN.

```
SAFFFF ROSS
                                                                                                                                                            Ş
                                                                                                                                                                                                                          PRIM_HELPJ
                                                                                                                                        망
                                                                                                                                                                                 Matches
                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                   PÉAM; PEO0018; SH3; 1.

PÉAM; PEO0018; SH3; 1.

PÉAM; PEO0069; Pkinase; 1.

PEINTS; PRO00401; SH3DOMAIN.

PRINTS; PR00401; TYRKINASE; 1.

PRINTS; PR00401; TYRKINASE; 1.

PRODOM; PD000001; Euk_pkinase; 1.

PRODOM; PD000006; SH3; 1.

PRODOM; PD0000093; SH2; 1.

SMART; SM002126; SH3; 1.

SMART; SM002126; SH3; 1.

SMART; SM00219; TYRK; 1.

PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

PROSITE; PS00119; PROTEIN_KINASE_ATP; 1.

PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.

PROSITE; PS50001; SH2; 1.

PROSITE; PS50001; SH2; 1.
                      Q9ZN49;
16-OCT-2001 (Rel
16-OCT-2001 (Rel
16-OCT-2001 (Rel
16-OCT-2001 (Rel
DNA primase (EC:
DNAG OR JHP0010.
                                                                                                                                                                                                                                             NP_BIND
BINDING
ACT_SITE
MOD_RES
MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities
or send a
                                                                                                                                                                                                                                                                                                DOMAIN
DOMAIN
            Helicobacter
                                                                                      PRIM_HELPJ
                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                LIPID
                                                                                                                                                                                                                                                                                                                                           TIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR000980; SH2.
InterPro; IPR001452; SH3.
InterPro; IPR001245; Tyr_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; M85043; AAA49003.1; -.
EMBL; J03579; AAA49081.1; ALT_INIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                     LIPID
                                                                                                                                                                                                                                                                                                                                                               INIT_MET
                                                                                                                                                                                                                                                                                                                                                                                  ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                             Proto-oncogene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HSSP; P06239;
                                                                                                                                      374 LCCKIADFGLARLIE 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR000980;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR000719; Euk_pkinase.
                                                                                                           φ
                                                                                                                                                            σ
                                                                                                                                                           LCTKVLDFGIDKLIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SWISS-PROT entry is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    s requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
                                                                                                                                                                                 Similarity
8; Conser
  roteobacteria;
                                (Rel. 40, Crea
(Rel. 40, Last
(Rel. 40, Last
(EC 2.7.7.-).
                                                                                                                                                                                                                          507
                                                                                                                                                                                                                                               0
125
125
244
271
262
392
392
                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                   Myristate;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Swiss Institute
                                                                                                                                                                                                                          ĀΑ;
                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                 Tyrosine-protein kinase; Phosphorylation; ristate; SH2 domain; SH3 domain; Palmitate;
                                                                                                                                                                                                                                               0
119
222
222
257
257
362
392
392
                                                                                                                                                                                                                          58008
                                                                                                                                                                                        38.3%;
53.3%;
                                                                                                                                                            20
                                          Last annotation
                                                               Created)
                                                      Last sequence
(Campylobacter pylori J99).
a; epsilon subdivision; Helicobacter group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       copyright. It is produced through a collaboration tute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                          MW;
                                                                                                                                                                                                                                                                                                         MYRISTATE
PALMITATE
PALMITATE
SH3.
SH2.
                                                                                                                                                                            Pred. No. 7.3,
4; Mismatches
                                                                                                                                                                                                                                                                         PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
                                                                                                                                                                                                  Score 49;
                                                                                                                                                                                                                                    SIMILARITY)
                                                                                                                                                                                                                                            PHOSPHORYLATION (AUTO-) (BY SIMILARITY).
PHOSPHORYLATION (NEGATIVE REGULATION) (BY
                                                                                                                                                                                                                                                                  BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                               PROBABLE
                                                                                     PRT;
                                                                                                                                                                                                                         BC83C4FA891B6170
                                                    update)
                                                                                     559
                                          update)
                                                                                                                                                                                        DB 1;
7.3;
                                                                                                                                                                                                                                                                                                                              (BY
(BY
(BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                              Y SIMILARITY).
Y SIMILARITY).
Y SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Usage
                                                                                                                                                                              ω.
                                                                                                                                                                                                  Length 507;
                                                                                                                                                                                                                        CRC64;
                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and
                                                                                                                                                                                                                                                                                                                                                                                            Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for
                                                                                                                                                                              0;
                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    00
00
                                                                                                                                                                              0
```

```
RESULT 10
PRIM_HELPY
                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                          PRIM_HELPY
P56064;
01-NOV-1997
01-NOV-1997
16-OCT-2001
DNA primase
STRAIN=26695 / ATCC 700392;
MEDLINE=97394467; PubMed=9252185;
Tomb J.-F., White O., Kerlavage A.R., Clayton R.A., Sutton G.G.
Fleischmann R.D., Ketchum K.A., Klenk H.-P., Gill S., Dougherty
Relson K., Quackenbush J., Zhou L., Kirkness E.F., Peterson S.,
Loftus B., Richardson D., Dodson R., Khalak H.G., Glodek A.,
McKenney K., FitzGerald L.M., Lee N., Adams M.D., Hickey E.K.,
Berg D.E., Gocayne J.D., Utterback T.R., Peterson J.D., Kelley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gastric pathogen Helicobacter pylori.";

Nature 397:176-180(1999),

-!- FUNCTION: DNA PRIMASE IS THE POLYMERASE THAT SYNTHESIZES SIERNA PRIMERS FOR THE OKAZAKI FRAGMENTS ON BOTH TEMPLATE STRUERLATION FORKS DURING CHROMOSOMAL DNA SYNTHESIS.
-!- COFACTOR: BINDS ONE ZINC ION PER MOLECULE (BY SIMILARITY).
-!- SUBUNIT: MONOMER (BY SIMILARITY).
                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                 Helicobacter pylori (Campylobacter
                                                                                                                                                                                                  DNAG OR HP0012
                                                                                                                                                                                                                                                                                                                                                                                                                                                              SMART; SM00400; ZnF_CHCC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF01751; Toprim; 1.
Pfam; PF01807; zf-CHC2; 1.
ProDom; PD002988; znf_CHC2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; AE001441; AAD05592.1; -. HSSP; Q9X4D0; 1D0Q.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entities requires a license agreement (Some send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    use by non-profit institutions as long modified and this statement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Enthe European Bioinformatics Institute. There are no resti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Trust T.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gibson R., Merberg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tummino P.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alm R.A., Ling L. S.L., Moir D.T., Smith D.R., Noonan B., Guild B.C.,
                                                                                                                                                        Helicobacter
                                                                                                                                                                    Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Transferase; DNA replication; DNA-directed RNA polymerase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alm R.A., Ling L. S.L.,
                                                                                                                                           NCBI_TaxID=210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR002936; DNAprim_toprim
InterPro; IPR002694; Znf_CHC2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=99120557; PubMed=9923682;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Helicobacter.
NCBI_TaxID=85963;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Genomic sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                     149 LCTNKIDYGIENKGLNKDKLIEL
                                                                                                                                                                                                                                                                                                                                                                               σ
                                                                                                                                                                                                                                                                                                                                                                             LCTKVLDFGI ----- DKLIQL
                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                          (Rel.
(Rel.
(Rel.
(EC 2.
                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g L.-S.L., Moir D.T., King B.L., Brown E.D., Doi
oonan B., Guild B.C., deJonge B.L., Carmel G.,
Caruso A., Uria Nickelsen M., Mills D.M., Ives
rberg D., Mills S.D., Jiang Q., Taylor D.E., Vov
                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                          . 35, Created)
. 35, Last sequence upd
. 40, Last annotation u
2.7.7.-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     comparison of two unrelated Helicobacter pylori.";
                                                                                                                                                                                                                                                                                                                                                                                                                       37.9%;
47.8%;
                                                                                                                                                                    epsilon
                                                                                                                                                                                                                                                                                                                                                                                                       ; Score 48.5;
; Pred. No. 9.
3; Mismatche
                                                                                                                                                                                                                                                                                                                                                     171
                                                                                                                                                                                                                                                                                                                                                                             21
                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                 subdivision; Helicobacter group;
                                                                                                                                                                                  pylori).
                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                 559
                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                 Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    isolates of the human
                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      by and for
                                                     Dougherty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ves C.,
Vovis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Doig P.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Primosome;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDS
                                                                                                                                                                                                                                                                                                                                                                                                        7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SMALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G.F
                                                         W
                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   its
                                                                                                                                                                                                                                                                                                                                                                                                        1:
```

STAND DRAFT DRAFT RAPER
0

```
VG33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q00118;
01-DEC-1992 (
01-DEC-1992 (
01-DEC-1992)
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _HSVI1
_HSVI1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR002936; DNAprim_toprim.
InterPro; IPR002694; Znf_CHC2.
Pfam; PF01751; Toprim; 1.
Pfam; PF01807; zf-CHC2; 1.
Probom; PD002988; Znf_CHC2; 1.
SMART: SM00493; TOPRIM; 1.
SMART; SM00409; ZnF_CHCC; 1.
Transferase; DNA replication; DNA-directed RNA polymerase;
                                                                                                                                                                                                                                                                                             Virology 186:9-14(1992)
                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-92087490;
                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-Auburn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ictalurid Herpes-like
NCBI_TaxID=10401;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Viruses; dsDNA viruses,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HSSP; Q9X4D0;
TIGR; HP0012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nature 388:539-547(1997)
                                                                                                                                                                                                                                                                                                                                                                      Davison A.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; AE000523; AAD07082.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entitles requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pylori
                                                                                                                                                                                                                                                                                                                          Channel catfish virus: a new type of herpesvirus.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ictalurid herpesvirus 1 (Channel catfish virus)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "The complete genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hayes W.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6 LCTKVLDFGI-----DKLIQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         s SWISS-PROT entry is copyright. It is produced through a collab
ween the Swiss Institute of Bioinformatics and the EMBL outst
European Bioinformatics Institute. There are no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RNA PRIMASE IS THE POLYMERASE THAT SYNTHESIZES RNA PRIMERS FOR THE OKAZAKI FRACMENTS ON BOTH TEMPLATE ST REPLICATION FORKS DURING CHROMOSOMAL DNA SYNTHESIS. COPACTOR: BINDS ONE ZINC ION PER MOLECULE OF THE STREET                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LCTURIDYGIENKGLUKDKLIEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9X4D0; 1D0Q.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  , Weidman J.M.,
Borodovsky M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24, Created)24, Last sequence update)24, Last annotation update)33 protein.
                                                                                                                                                                                                                                                                                                                                                                                                      PubMed=1727613;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      37.18;
47.88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 viruses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              no RNA stage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fujii C., Bowman C., Watthey L., Karp P.D., Smith H.O., Fraser C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 47.5;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gastric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Herpesviridae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pathogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 559;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Helicobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ıs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Primosome,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wallin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SMALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ۲.
```

ş В

```
RESULT 12
GCP_MEAN
ID GCP_MA
ID GCP_M
AC 05853
DT 15-UU
DT 15-UE
CG Netha
OC Archa
CO Archa
CO Archa
CO Archa
OC Archa
O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SORR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCP_METJA
Q58530;
                                                                                                   InterPro; IPR000719; Euk_pkinase.
InterPro; IPR000905; Peptidase_M22.
InterPro; IPR001245; Tyr_pkinase.
Pfam; Pr00814; Peptidase_M22; 1.
PRINTS; PR00789; OSIALOPTASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bult C.J., White O., Olsen G.J., Zhou L., Fleischmann R.D., Sutton G.G., Blake J.A., FitzGerald L.M., Clayton R.A., Gocayne J.D., Kerlavage A.R., Dougherty B.A., Tomb J.F., Adams M.D., Reich C.I., Overbeek R., Kirkness E.F., Weinstock K.G., Merrick J.M., Glodek A., Scott J.L., Geoghagen N.S.M., Weidman J.F., Fuhrmann J.L., Nguyen D., Utterback T.R., Kelley J.M., Peterson J.D., Sadow P.W., Hanna M.C., Cotton M.D., Roberts K.M., Hurst M.A., Kaine B.P., Borodovsky M., Klenk H.-P., Fraser C.M., Smith H.O., Woese C.R., Venter J.C., "Complete genome sequence of the methanogenic archaeon, Methanococcus
                                                                                                                                                                                                                                                                                                                                                               use by non-profit institutions as long modified and this statement is not removed entitles requires a license agreement (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -!- FUNCTION: COULD BE A NETALLOPROTEASE.
-!- CATALYTIC ACTIVITY: Hydrolysis of O-sialoglycoproteins; cleave 131-Arg-1-Asp-32 bond in glycophorin A. Does not cleave unglycosylated proteins, desialylated glycoproteins or glycoproteins that are only N-glycosylated.
-!- COFACTOR: ZINC (PROBABLE).
-!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY M22
-!- SIMILARITY: BELONGS TO SETTIPE SIMILARITY WITH CONSERVED REGION OF CATALYTIC DOMAIN OF PROTEIN KINASES.
                          TIGRFAMS;
                                             ProDom; PD000001; Euk_pkinase; 1.
ProDom; PD002367; Peptidase_M22;
                                                                                                                                                                                                                                      TIGR; MJ1130;
                                                                                                                                                                                                                                                              MEROPS;
                                                                                                                                                                                                                                                                                         EMBL; U67555;
                                                                                                                                                                                                                                                                                                                                       or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Jannaschii.";
Science 273:1058-1073(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-JAL-1 / DSM 2661
MEDLINE-96337999; PubMec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-JUL-1998
15-DEC-1998
15-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PIR; G36789; G36789.
Hypothetical protein
SEQUENCE 290 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                             the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Archaea; Euryarchaeota; Methanococci; Meth
Methanocaldococcaceae; Methanocaldococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Putative O-sialoglycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Methanococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; M75136; AAA88136.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Glycoprotease).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GFIATLCTKVLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                SWISS-PROT entry is copyright. It is produced een the Swiss Institute of Bioinformatics and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GFITTTCTKELD
                                                                                                                                                                                                                                                         M22.UPW; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
9; Conser
                             TIGR00329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Rel. 36, Created)
(Rel. 37, Last sequence update)
(Rel. 41, Last annotation update)
sialoglycoprotein endopeptidase (E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               jannaschii.
                                                                                                                                                                                                                                                                                         AAB99132.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           M 2661 / ATCC 43067;
PubMed=8688087;
GLYCOPROTEASE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36.7%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Methanococci; Methanococcales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               X
X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21C26260985A7E5E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           535
                                                                                                                                                                                                                                                                                                                                                                  (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
                                                                                                                                                                                                                                                                                                                                                                                                                                       There are no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'n
                                                                                                                                                                                                                                                                                                                                                                                                                     as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (EC
                                                                                                                                                                                                                                                                                                                                                                                       Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3.4.24.57)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             through
                                                                                                                                                                                                                                                                                                                                                                                          bу
                                                                                                                                                                                                                                                                                                                                                                                            and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D
                                                                                                                                                                                                                                                                                                                                                                                               for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cleaves
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     collaboration -
                                                                                                                                                                                                                                                                                                                                                                                       in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                             9
```

```
RESULT 13
STIL_YEAST
ID STIL_YEAST
ID STIL_YEAST
ID STIL_YEAST
ID STIL_YEAST
ID STIL_YEAST
ID STILL YEAST
ID YEAST
ID STILL YEAST
ID TO THE STILL YEAST
ID STILL YEAR 
ID STILL YE YEAR 
ID STILL YEAR 
I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DR KW FTT FTT FTT SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS00
PROSITE; PS50
Hypothetical
Complete prot
DOMAIN
3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Johnston M., Andrews S., Brinkman R., Cooper J., Ding H., De Favello A., Fulton L., Gattung S., Greco T., Kirsten J., Kucaba T., Hallsworth K., Hawkins J., Hillier L., Jier M., Johnson D., Johnston L., Langston Y., Latreille P., Le T., Johnson E., Menezes S., Miller N., Nhan M., Pauley A., Peluso Rifken L., Riles L., Taich A., Trevaskis E., Vignati D., Wilcox L., Wohldman P., Vaudin M., Wilson R., Waterston R.; Submitted (JAN-1995) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                 multiple phosphorylation of the STET kinase.";
Genes Dev. 6:1305-1318(1992).
-:- FUNCTION: SERVINE/THREONINE PROTEIN KINASE REQUIRED FOR CELL SPECIFIC TRANSCRIPTION AND SIGNAL TRANSDUCTION IN YEAST. IT IS THOUGHT THAT IT PHOSPHORYLATES THE STET PROTEIN KINASE ITSSELF, PHOSPHORYLATES THE FUST AND OR KSS1 KINASES.
-!- PATHWAY: RESPONSE TO PHEROMONE-INDUCED SIGNAL.
-!- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASE MAP KINASE KINASE KINASE SUBFAMILY.
                                                 This SWISS-PROT entry is copyright. It is produced through a collaboratic between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no was use by non-profit institutions as long as its content is
                                                                                                                                                                                                                                                                                                                                                                                                                          Cairns B.R., Ramer S.W., Kornberg K.D.; "Order of action of components in the yeast phe pathway revealed with a dominant allele of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10 VLDFGIDKLIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rocat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IIDFGLGKISNLDEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PS00109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     proteome.
                            non-profit institutions as long and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            333
106
110
535 #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein; Hydrolase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROTEIN_KINASE_TYR; UNKNOWN_1.
PROTEIN_KINASE_DOM; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     312
535
106
110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60570
  license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   35.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₩;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZINC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROTEIN KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              METALLOPEPTIDASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B18EEFACE8E5A99F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Metalloprotease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for cell-type-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
(EC 2.7.1.-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                in yeast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DВ
22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Saccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                            pheromone response
the STEll kinase and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LIKE
                            Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 535;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Saccharomycetes;
                                                                                                                                                                                                                           PROTEIN KINASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zinc;
                              γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Peluso
                                                                                                                                                                                                                                                                                                                               FOR CELL-TYPE:
(EAST, IT
                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          þ
                                 for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D.,
                                                                                                       collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                              commercial
                                                      way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                                                                                                       EPAI_HUMAN STANDARD; PKI; 270 Fm.

P21709; Q15405;
01-MAY-1991 (Rel. 18, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Ephrin type-A receptor 1 precursor (EC 2.7.1.112) (Tyrosine-protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BINDING
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Prodom: PD000001; Euk_pkinase; 1.
SMART; SM00454; SAM; 1.
SMART; SM00220; S_TKC; 1.
SMART; PS00107; PROTEIN_KINASE_ATP;
PROSITE: PS50011; PROTEIN KINASE_ATP;
                                                     Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE;
                                                                                                                                                                                 SEQUENCE FROM N.A.
MEDLINE-B8070650; PubMed-2825356;
Hirai H., Maru Y., Hagiwara K., Nishida J.,
"A novel putative tyrosine kinase receptor science 238:1717-1720(1987).
                                                                                                                                                                                                                                                                                                                                                                                           MAMUH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00069; pkinase; Pfam; PF00536; SAM; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR; A36456; A36456.
SGD; S0004354; STE11.
                                                                                                                   Owshalimpur D., Kelley M.J.; "Genomic structure of the EPHA1 receptor Mol. Cell. Probes 13:169-173(1999).
                                                                                                                                                                                                                                                                Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; X53431;
EMBL; U19103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or send an email to license@isb-sib.ch).
           ÷
                                                                                                                                                                                                                                                                                                  EPHA1 OR EPHT1 OR EPHT OR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pheromone
                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                      NCBI_TaxID=9606
                                                                                                                                                                                                                                                                                       Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fransferase; Serine/threonine-protein
                                                                                     rISSUE*Placenta;
                                                                                                SEQUENCE OF 286-976
                                                                                                                                                       wEDLINE=99299440; PubMed=10369740;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  interPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR001660;
                                                                                                                                                                                                                                                                                                                                                                                                                                   613 CVKITDFGISKKLSPLNKK 631
                                                                                                                                                                                                                                                                                                                                                                                                                                                          7
                               mitted (MAY-1994) to the EMB
FUNCTION: RECEPTOR FOR MEMBI
A LOW AFFINITY TO EPHRIN-AL
CATALYTIC ACTIVITY: ATP + a
           tyrosine phosphate.
SUBCELLULAR LOCATION: Type I membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTKVLDFGIDKLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PS50011; PROTEIN_KINASE_DOM; 1
PS00108; PROTEIN_KINASE_ST; 1.
PS50105; SAM_DOMAIN; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IPR002290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IPR000719; Euk_pkinase IPR001660; SAM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          response.
SPECIFICITY: OVEREXPRESSED IN SEVERAL CARCINOMAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         600
738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             436
436
442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         105
733
450
465
600
83217
                                                                                                                                                                                                                                                                 Chordata; Craniata; Vertebrata; Primates; Catarrhini; Hominidae;
                                                                                                FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          35.9%;
42.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ser_thr_pkinase.
                                                                                                Z
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                         25
                                                                                                                                                                                                                                                                                                  EPH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₩;
                                                     e EMBL/GenBank/DDBJ
MEMBERS OF THE EPHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROTEIN KINASE.
ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
                                 හ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A50D69800B346A41 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                protein tyrosine -
                                                                                                                                                                                                receptor encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     kinase; ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
31;
                                                                                                                                 tyrosine
                                                     EPHRIN-A FAMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ب
--
                                                                                                                                                                                                            Takaku
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 738;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                 kinase
                                                      FAMILY. BINDS WITH
                                                                                                                                                                                                bу
                                                                                                                                                                                                            T
                                                                                                                                                                                                                                                                           Euteleostomi;
                                                                                                                                                                                                                                                                  Homo.
                                                                                                                                                                                                the eph gene.";
                                protein
                                                                                                                                gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its

SIMILARITY: CONTAINS 1 SAM DOMAIN.
SIMILARITY: CONTAINS 2 FIBRONECTIN TYPE I
SIMILARITY: BELONGS TO THE TYR FAMILY OF

III-LIKE DOMAINS. F PROTEIN KINASES.

EPHRIN

RECEPTOR SUBFAMILY.

```
SMART; SM00060; FN3; 2.

SMART; SM00454; SAM; 1.

SMART; SM00454; SAM; 1.

SMART; SM00219; TYPKC; 1.

PROSITE; PS001186; EGF_2; UNKNOWN_1.

PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

PROSITE; PS00119; PROTEIN_KINASE_DOW; 1.

PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.

PROSITE; PS001790; RECEPTOR_TYR_KIN_V_1; 1.

PROSITE; PS001791; RECEPTOR_TYR_KIN_V_2; 1.

PROSITE; PS001791; RECEPTOR_TYR_KIN_V_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00041; fn3; 2.
Pfam; PF00069; pkinase; 1.
Pfam; PF00536; SAM; 1.
Pfam; PF01404; EPH_Lbd; 1.
PRINTS; PR00109; TYRKINASE.
PRODOM; PD000001; Euk_pkinase; 1.
PRODOM; PD001495; Ephrin_receptor; 1
          NP_BIND
BINDING
BINDING
ACT_SITE
MOD_RES
MOD_RES
MOD_RES
MOD_RES
CARBOHYD
CARBOHYD
                                                                                                                                                                                                            DOMAIN
TRANSMEM
                                                                                                                                                                                                                                    SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                 DOMAIN
                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL;
CARBOHYD
                                                                                                                        DOMAIN
SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; Z27409; CAA81796.1;
PIR; A34076; A34076.
                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                             Receptor;
                                                                                                                                                                                                                                                                        Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR003961; FN_TII.
InterPro; IPR001660; SAM.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR001426; YKase_receptorV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    мім; 179610;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HSSP; P00523;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR000561; EGF+like.
InterPro; IPR001090; Ephrin_re
InterPro; IPR000719; Euk_pkina
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           L; AF101115; AAD43440.1; JOINED
L; AF101165; AAD43440.1; JOINED
L; AF101166; AAD43440.1; JOINED
LL; AF101167; AAD43440.1; JOINED
LL; AF101168; AAD43440.1; JOINED
JL; AF101169; AAD43440.1; JOINED
JL; AF101170; AAD43440.1; JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                M18391; AAA36747.1; ALT_SEQ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P00523; 2PTK.
HGNC:3385; EPHA1.
                                                                                                                                                                                                                                                             Transmembrane;
                                                                                                                                                                                                                                                OULD; SAM_DOMAIN; 1.

Tyrosine-protein kinase; ATP-binding; ansmembrane; Glycoprotein; Signal; Report 23

POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Euk_pkinase.
FN_III.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ephrin_receptor.
      BY SIMILARITY.

PHOSPHORYLATION (AUTO-)

PHOSPHORYLATION (AUTO-)

PHOSPHORYLATION (AUTO-)

PHOSPHORYLATION (AUTO-)

PHOSPHORYLATION (AUTO-)

PHOSPHORYLATION (AUTO-)

N-LINKED (GLCNAC...) (E

N-LINKED (GLCNAC...) (E
                                                                                                ATP
                                                                                                                                                           FIBRONECTIN TYPE-III
                                                                                                                                                                                    CYTOPLASMIC (POTENTIAL)
CYS-RICH.
                                                                                                                        PDZ-BINDING MOTIF
                                                                                                                                                PROTEIN KINASE.
                                                                                                                                                                                                                      EPHRIN TYPE + A RECEPTOR 1.

EXTRACELLULAR (POTENTIAL).
                                                                                                          (BY
                                                                                                (BY SIMILARITY).
                                                                                                          SIMILARITY)
(GLCNAC
                                                                                                                       (POTENTIAL).
                                                                                                                                                                                                                                                            Repeat.
                                                                                                                                                            21.
                                                                                                                                                                                                                                                                      Phosphorylation;
       (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
```

```
RESULT 1.

Y390_MYCPN

ID Y390_MYCPN

P75207;

P75207;

NOV-100
                                                                                                   밁
                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                 SOLD DESCRIPTION OF THE PROPERTY OF THE PROPER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SQ
TT
TT
TT
Search completed: May
Job time: 10.7353 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches
                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Hypothetical ATP-binding protein MG390 homolog
MPN571 OR MP271.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN-ATCC 29342 / M129;
MEDLINE-97105885; PubMed-8948633;
Himmelreich R., Hilbert H., Plagens H.,
                                                                                                                                                                                                                                                                                           Hypothetical protein; ATP-binding; Complete proteome NP_BIND 494 501 ATP (POTENTIAL). SEQUENCE 660 AA; 76014 MW; B2A97A32F7F993A7 CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN the European Bioinformatics Institute. There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CONFLICT
                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR003439; ABC_transportr.
InterPro; IPR005074; Peptidase_C39.
Pfam; PF00005; ABC_tran; 1.
Pfam; PF03412; Peptidase_C39; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mycoplasma pneumoniae Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AE000027; AAB95919.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nucleic Acids Res.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pneumoniae."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Herrmann R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=2104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -!- SIMILARITY: LIMITED, TO ABC TRANSPORTERS ATP-BINDING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Complete sequence analysis of the genome
                                                                                                 422 TRIIQFGAAVNLYQFCKDKLVTLFEDK 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  761 LCCKVSDFGLTRLL
                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                               TKVLDFGI---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LCTKVLDFGIDKLI
                                                                                                                                                                                               1 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  976
                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         398
581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24:4420-4449(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  108080
                                                                                                                                                                                                                      35.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          35.9%;
57.1%;
                         2003,
                                                                                                                          -DKLIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mollicutes; Mycoplasmataceae; Mycoplasma
                         16:16:20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MW;
                                                                                                                                                                                                  4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A -> G (IN REF. 1).

QRDRATDVDREDKLWLKPYVDLQAYEDPAQGALDFT ->
HVTAPPMWIERTSCAEALCGTSRHTRTLHREPWTLPGGWSN
                                                                                                                                                                                                                      Score 45.5;
Pred. No. 33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SdA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                 B2A97A32F7F993A7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 (IN REF. 1).
50512CCF13F03808 CRC64;
                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          660 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pirkl
                                                                                                                                                                                                                                                   DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>..</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                [H]
                                                                                                                                                                                                  4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                u
T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (D02_orf660).
                                                                                                                                                                                                                                                Length 660;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Li
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .
ငှ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mycoplasma
                                                                                                                                                                                               9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
```

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                         Database :
                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein - protein search, using sw model
 SPTREMBL_21:*

1: sp_archea:*
2: sp_bacteria
3: sp_fungi:*
4: sp_human:*
5: sp_human:*
5: sp_mammal:*
7: sp_mhc:*
8: sp_organel1:
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:
12: sp_virus:*
13: sp_vertebr:
14: sp_urclass:
15: sp_urclass:
16: sp_archeap
17: sp_archeap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-851-422A-8
128
1 GFIATLCTKVLDFGIDKLIQLIEDKXX 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      May 9, 2003, 16:10:40; Search time 18.5294 Seconds (without alignments) 300.240 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       671580 seqs, 206047115 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                 sp_organelle:*
sp_phage:*
sp_plant:*
sp_vertebrate:*
sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                sp_rodent:*
sp_virus:*
                                                                                                                                                                                                                                                       sp_archea:*
sp_bacteria:*
                                                                                                                                                                     sp_invertebrate:*
sp_mammal:*
sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                        671580
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

S	
C,	
3	
z	
➣	
×	

16	15		13	12	11	10	9	00	7	σ	U	4	ω	2	. ــ	Result No. S
48	48.5	49	49	50	50	50	51	51	52	53	54	54	63	69	88	Score
37.5	37.9	38.3	38.3	39.1	39.1	39.1	39.8	39.8	40.6	41.4	42.2	42.2	49.2	53.9	68.8	Query Match
371	551	629	309	816	233	213	520	491	396	835	459	421	87	101	96	Query Match Length DB
ъ	w	10	w	12	ഗ	16	16	17	17	12	10	10	U	U	თ	DB
Q23326	Q96X52	Q943D4	Q08743.	Q9E1W9	Q9VII2	Q9A314	Q8YNP6	Q8TV25	026243	Q9J3N7	Q93Z30	049409	015591	Q9U8G4	Q9U8G5	ID
Q23326 caenorhabdi	Q96x52 pholiota na	Q943d4 oryza sativ	Q08743 saccharomyc	Q9elw9 cercopithec	Q9vii2 drosophila	_	٠.	Q8tv25 methanopyru	O26243 methanobact	Q9j3n7 human herpe	Q93z30 arabidopsis	049409 arabidopsis	015591 entamoeba h	Q9u8g4 entamoeba d	Q9u8g5 entamoeba d	Description

RESULT 2

45	44	43	42	41	40	39	38	37	36	ω 5	34	33	32	31	30	29	. 28	27	26	25	24	23	22	21	20	19	18	· 17
46	46	46	46	46.5	46.5	46.5	46.5	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47.5	48	48	48	48	48	4.8
5.	ŗ	Ÿ	5	٥,	6.	6	٥.	6.	36.7	٥.	36.7				36.7	36.7	36.7	36.7	36.7	36.7	σ.	7	37.5	7	.7	7.		
386	319	215	131	859	379	258	257	984	806	618	537	372	372	372	372	372	372	372	317	183	131	885	1274	654	638	481	443	425
16	16	16	16	16	2	v	ري ري	10	10	10	10	رۍ	ഗ	U)	ъ	ഗ	ഗ	ഗ	10	16	16	10	رب ر	10	10	16	10	16
Q8XZK5	OH886O	Q9PHP9	025024	Q9A6P4	Q9ZEX1	Q8T1N4	Q9U7C4	Q9LZV1	Q9FID5	Q943D9	Q943D6	Q9XTM3	Q25260	Q9Y077	Q9U1G1	Q9Y079	180160	Q9Y074	Q9M2J1	Q92UM3	Q9ZMJ3	Q9LPC6	060985	Q943C7	Q9FF31	p72727	Q943D1	099RP5
		Q9php9 campylobact	O25024 helicobacte	Q9a6p4 caulobacter	Q9zex1 bordetella		a.			Q943d9 oryza sativ	Q943d6 oryza sativ		Q25260 leishmania	Q9y077 leishmania		ဖ		-	_	Q92um3 rhizobium m			ο.	-			Q943d1 oryza sativ	Q99rp5 staphylococ

ALIGNMENTS

		·
qi VQ	Ma Be	RESULT Q908G5 AC AC AC AC AC AC AC AC AC A
1 GFIATLCTKVLDFGIDKLIQLIED 24	Ouery Match 68.8%; Score 88; DB 5; Length 96; Best Local Similarity 58.3%; Pred. No. 5.7e-06; Matches 14; Conservative 7; Mismatches 3; Indels 0; Gaps 0;	GSUBGS PRELIMINARY; PRT; 96 AA. G9UBGS; Ol-MAY-2000 (TrEMBLrel. 13, Created) Ol-MAY-2000 (TrEMBLrel. 13, Last sequence update) Ol-MAY-2000 (TrEMBLrel. 21, Last annotation update) Ol-JUN-2002 (TrEMBLrel. 21, Last annotation update) Pore-forming protein isoform B precursor. Entamoeba dispar. Entamoeba dispar. Entamoeba dispar. Entamoeba dispar. Entamoeba dispar. STRAIN-SAW 142; MEDLINE-99449604; PubMed-10518795; MEDLINE-99449604; PubMed-10518795; MEDLINE-99449604; C., Dandekar T., Leippe M.; "Pore-forming peptides of entamoeba dispar similarity and divergence to amoebapores in structure, expression and activity."; "Pore-forming peptides of entamoeba dispar similarity and divergence to amoebapores in structure, expression and activity."; ENEL; J. Biochem. 265:1002-1007(1999). EMBL; AF082528; AAF04195.1; - Interpro; IPR000004; SapB. ProDom; PD001732; SapB; 1. SIGNAL 1 19 POTENTIAL. SIGNAL 20 96 CHAIN 20 96 AA; 10480 MW; 9FA42AAC9A9FAFB2 CRC64;

```
RESULT
015591
밁
                                Ş
                                                                                                                                                                   SO DE RESERVA DE LA COMPTE DEL COMPTE DE LA COMPTE DEL COMPTE DE LA COMPTE DEL COMPTE DE LA COMPTE DEL COMPTE DE LA COMPTE DEL COMPTE DE LA COMPTE D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ő
                                                                             Query Match
Best Local S
Matches 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9U8G4;
Q9U8G4;
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      015591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Signal.
SIGNAL
CHAIN
                                                                                                                                                                 NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-JAN-1998 (TrEMBLrel. 05, Created 01-JAN-1998 (TrEMBLrel. 05, Last so 01-MAR-2002 (TrEMBLrel. 20, Last at Amoebapore C homologue (Fragment).
                                                                                                                                                                                                                                                                                                   Tanaka T., Tanaka M., Mitsui Y.;

"Analysis of expressed sequence tags (ESTs) of the parasitic Entamoeba histolytica.";
Biochem Biochem
                                                                                                                                                                                                                           Biochem. Biophys. Res. Commu
EMBL: AB002741; BAA21986.1;
InterPro; IPR000004; SapB.
SMART; SM00118; SAPB; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Entamoeba histolytica.
Eukaryota; Entamoebidae;
NCBI_TaxID=5759;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SMART; SM00118; SAPB; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eur. J. Biochem. 265:1002-1007(1999).
EMBL; AF082529; AAF04196.1; -.
InterPro; IPR000004; SapB.
ProDom; PD001732; SapB; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-99449604; PubMed=10518795;
Nickel R., Ott C., Dandekar T., Leippe M.;
"Pore-forming peptides of entamoeba dispar similarity and to amoebapores in structure, expression and activity.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-SAW 142;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Entamoeba dispar,
Eukaryota; Entamoebidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pore-forming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-MAY-2000 (TrEMBLrel.
01-JUN-2002 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-97396144; PubMed-9245698;
                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-HM-
                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID-46681;
                                                                                                                                                                                                          NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EQUENCE FROM N.A.
59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64
                                      <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GFIATLCTKVLDFGIDKLIQLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GVIETVCSKIVSYGIDKLIEKI
                                    GFIATLCTKYLDFGIDKLIQLI
GLVATLCTPIASFGIAKLLASI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                l Similarity
12; Conserv
                                                                               Similarity
12; Conser
                                                                                                                                                                 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (TrEMBLrel. 13, Created)
(TrEMBLrel. 13, Last sequence update)
(TrEMBLrel. 21, Last annotation update)
protein isoform C precursor.
                                                                                                                                                                                       87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25
25
                                                                                                                                                                 Ą,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24
101
                                                                                                                                                                 9131 MW;
                                                                                                                                                                                       87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10877
                                                                                                 49.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53.98;
                                                                                                                                                                                                                                                                                            Commun. 236:611-615(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   05, Created)
05, Last sequence update)
20, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Entamoeba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Entamoeba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ME:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22
90
                                    22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                             ω
                                                                             Score 63; DB
Pred. No. 0.03
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 69; DB Pred. No. 0.006; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL.
PORE-FORMING PROTEIN ISOFORM
7699A7EA9E0876EB CRC64;
                                                                                                                                                                 FDD1C1B0FAB8B06E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 5;
0.0053;
                                                                                                                      ₽B
                                                                                                 DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA
                                                                                                                                                                 CRC64;
                                                                                                                  Length 87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                             0
                                                                                                                                                                                                                                                                                                                                   protozoa
                                                                             Caps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                               0
```

RESULT

```
RESULT 5
Q93Z30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AC CONTRACTOR OF THE CONTRACTO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            049409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 10
SEQUENCE FROM N.A.

Cheuk R., Chen H., Kim C.J., Koesema E., Meyers M.C., Bann J., Cheuk R., Chen H., Kim C.J., Koesema E., Meyers M.C., Bann J., Bowser L., Carninci P., Dale J.M., Goldsmith A.D., Hayashizaki Y., Bowser L., Carninci P.X., Jones T., Kamiya A., Karlin-Neumann G., Ishida J., Jiang P.X., Jones T., Kamiya A., Karlin-Neumann G., Ishida J., Lam B., Lee J.M., Lin J., Liu S.X., Miranda M., Narusaka Kawai J., Lam B., Lee J.M., Lin J., Liu S.X., Miranda M., Narusaka Nguyen M., Ondera C.S., Palm C.J., Pham P.K., Quach H.L., Sakurai Nguyen M., Ondera C.S., Palm C.J., Pham P.K., Quach H.L., Yamada K.,
                                                                                                                                                                                                                                                           01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 21, Last sequence update)
01-DEC-2001 (TrEMBLrel. 21, Last annotation update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
AT4918950/F13C5_120.
AT4918950/F13C5_120.
Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheor Spermatophyta; Magnoliophyta; eudlcotyledons; core eudlcots; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q93Z30;
Q93Z30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE Pohl T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             049409;
01-JUN-1998 (TrEMBLrel. 06, Created)
01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Protein kinase - like protein (Protein kinase-like)
F13C5.120 OR AT4G18950.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE; PS50088; ANK_REPEAT; 2.
PROSITE; PS50297; ANK_REP_REGION; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
ANK repeat; ATP-binding; Kinase; Repeat; Transfe SEQUENCE 421 AA; 48173 MW; 6CC6FF878686A5AE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EU Arabidopsis sequencing pr
Submitted (MAR-2000) to the
EMBL: AL021711; CAA16752.1;
EMBL: AL161549; CAB78897.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheoj
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ProDom; PD0000001; Euk_pkinase; SMART; SM00248; ANK; 1.
SMART; SM00221; STYKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR004040; ST: Pfam; PF00023; ank; 3. Pfam; PF00069; pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Schueller
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   049409
                                                                                                                                                                                                                                     NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR002110; ANK.
InterPro; IPR000719; Euk_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   258 KVADFGVSKLVTVKEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KVLDFGIDKLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l Similarity
10; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pohl T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Weizenegger
1 (MAR-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (FEB-1998) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Weizenegger T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               42.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STY_pkinase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ö,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           , Mewes H. the EMBL/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   project;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              wes H.W., Lemcke K., Mayer K
EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 54; DB pred. No. 4.6; 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bancroft I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Transferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      À
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mayer K.F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mewes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tracheophyta;
                                                                                                                                                                                                                                                                                                                  Tracheophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Η. Ψ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mayer K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                 . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
RESULT OF THE PROPERTY OF THE 
      RESULT
026243
                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local s
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR002110; ANK.
InterPro; IPR002110; ANK.
InterPro; IPR000719; Euk_pkinase.
Pfam; PF00063; AnK; 3.
Pfam; PF00063; pkinase; 1.
ProDom; PD000001; Euk_pkinase; 1.
PROSITE; PS50088; ANK_REPEAT; 2.
PROSITE; PS50297; ANK_REP_REGION; 1.
PROSITE; PS50211; PROTEIN_KINASE_DOM; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
ANK repeat; ATP-binding; Repeat; Transferase.
SEQUENCE 459 AA; 52617 MW; 837CA5E95225ZE02 CRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09J3N7
09J3N7;
01-0CT-2000
01-0CT-2000
01-JUN-2001
                                                                                                                                                                                               026243;
                                                                                                                                             01-JAN-1998 (TrEMBLrel. 01-JAN-1998 (TrEMBLrel. 01-JUN-2002 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM
                                                  Methanobacterium thermoautotrophicum.
Archaea; Buryarchaeota; Methanobacteria; Methanobacteriales;
Methanobacteriaceae; Methanothermobacter.
NCBI_TaxID=187420;
                                                                                                                              Conserved protein.
                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR003450; Herpes_ori_bp.
Pfam; PF02399; Herpes_ori_bp; 1.
SEQUENCE 835 AA; 94383 MW; B038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
Argaw T., Cohen J.I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alphaherpesvirinae;
NCBI_TaxID=10335;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Viruses; dsDNA viruses, no RNA stage;
Alphaherpesvirinae; Varicellovirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human herpesvirus 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (AUG-2001) to the EMBL; AY058189; AAL25602.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ecker J.R.;
"Arabidopsis cDNA clones.";
                                                                                                                   MTH140
                                                                                                                                                                                                                                                                                             225 GFSGRTCTILRDMGIDTLVRVIK 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                         1 GFIATLCTKVLDFGIDKLIQLIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KVADFGVSKLVTVKEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KVLDFGIDKLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           l Similarity
10; Conser
                                                                                                                                                                                                                                                                                                                                                           l Similarity
10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Tremblrel. (Tremblrel. (Tremblrel. )
                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                    N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        42.2%;
                                                                                                                                                                                                                                                                                                                                                                      41.4%;
43.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Klutch M., Lekstrom K., Yoshikawa T.,
                                                                                                                                               05,
05,
21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15,
15,
17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. 5;
3; Mismatches
                                                                                                                                             Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                           5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                        Score 53;
Pred. No.
                                                                                                                                                                                                                                                                                                                           23
                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                        B0386877ACEA9FFB CRC64;
                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                835
                                                                                                                                                                                                              396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Herpesviridae
                                                                                                                                                                                                                                                                                                                                                                           DB
13;
                                                                                                                                                                                                              Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                         12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10;
                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4;
                                                                                                                                                                                                                                                                                                                                                                                     Length 835;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 459;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    parental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Asano Y.,
                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                           0
RESULT
QBYNP6
ID Q8
AC Q8
DT 01
DT 07
DT 07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 8
Q8TV25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                               В
                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             O8TV25 PRELIMINARY:
O8TV25;
O1-JUN-2002 (TrEMBLrel. 2
O1-JUN-2002 (TrEMBLrel. 2
O1-JUN-2002 (TrEMBLrel. 2
Q8YNP6;
Q8YNP6;
Q1-MAR-2002
Q1-MAR-2002
Q1-JUN-2002
                                                                                                                                                                                                                                                                            Complete
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF02589; DUF162; 1.
Pfam; PF00037; fer4; 2.
PROSITE; PS00198; 4FE4S_FERREDOXIN; 2.
Iron-sulfur; Complete proteome.
SEQUENCE 396 AA; 42840 MW; 5800487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR001450; 4Fe4S_ferredoxin.
InterPro; IPR003741; DUF162.
                                                                                                                                                                                                                                                                                                        EMBL; AE010447; AAM02789.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID-2320;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Methanopyrus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Archaea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Methanopyrus kandleri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MK1576.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=98037514; PubMed=9371463;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             207 LSLMDTHIMVFGVDKLVPQIED
                                                                                                                                               14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3 IATLCTKVLDFGIDKLIQLIED
                                                                                                                                                                          1 GFIATLCTKVLDFGIDKLIQLIEDK 25
                                                                                                                                               GFISTICCTVIGGGVNVLTCMIQVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
9; Conserv
                                                                                                                                                                                                                                                                                        proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euryarchaeota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                transporter
(TrEMBLrel.)
(TrEMBLrel.)
                                                                                                                                                                                                                                                                          491 AA;
                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                          52944 MW;
                                                                                                                                                                                                                        39.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40.6%;
 20,
20,
21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21,
21,
21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Methanopyri;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7;
                                 Created)
Last sequence update)
Last annotation update)
```

```
smith D.R., Doucette-Stamm L.A., DeLoughery C., Lee H.-M., Dubois Aldredge T., Bashirzadeh R., Blakely D., Cook R., Gilbert K., Harrison D., Hoang L., Keagle P., Lumm W., Pothier B., Qiu D., Spadafora R., Vicare R., Wang Y., Wierzbowski J., Gibson R., Jiwani N., Caruso A., Bush D., Safer H., Patwell D., Prabhakar S., McDougall S., Shimer G., Goyal A., Pietrovski S., Church G.M., Daniels C.J., Mao J.-I., Rice P., Noelling J., Reeve J.N.; "Complete genome sequence of Methanobacterium thermoautotrophicum deltaH: functional analysis and comparative genomics."; J. Bacteriol. 179:7135-7155(1997).
                          Score 52; I
Pred. No. 8.
                                                                                                             58004872C32B49BB CRC64;
Mismatches
                          DB
8.9;
                                                     17;
6,
                                                     Length 396;
Indels
0;
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                J.,
0;
```

491

Created)
Last sequence update) Last annotation update) Methanopyrales; Methanopyraceae; A

STRAIN=AV19 / DSM 6324 / JCM 9639;
MEDLINE-21927647; PubMed-11930014;
Slesarev A.I., Mezhevaya K.V., Makarova K.S., Polushin N.N.,
Shcherbinina O.V., Shakhova V.V., Belova G.I., Aravind L.,
Natale D.A., Rogozin I.B., Tatusov R.L., Wolf Y.I., Stetter
Malykh A.G., Koonin E.V., Kozyavkin S.A.; Stetter K.O.,

"The complete genome of hyperthermophile Methanopyrus kandleri AV19 and monophyly of archaeal methanogens.";
Proc. Natl. Acad. Sci. U.S.A. 99:4644-4649(2002).
EMBL; AE010447; AAM02789.1; -. Score 51; Pred. No. 0A087E1EE2981B9B CRC64; Mismatches DB 16; Length 491 Indels 0 Gaps

0

520 ₹

```
A CONTRACTOR OF THE CONTRACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SO CRARA REPRESENTATION OF CONTRACT CON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09A314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
               Best Loc
Matches
                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cyanobacterium Anabaena sp. strain PCC 7120.";
DNA Res. 8:205-213(2001).

EMBL; AP003596; BAB76217.1;
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR0002199; Ser_thr_pkinase.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR001245; Tyr_pkinase; 1.
ProDom; PD000001; Euk_pkinase; 1.
ProDom; PD000001; Euk_pkinase; 1.
SMART; SM00219; TyrKc; 1.
SMART; SM00219; TyrKc; 1.
SMART; SM00219; TyrKc; 1.
PROSITE; PS00101; PROTEIN_KINASE_ATP; UNKNOWN_1.
PROSITE; PS00118; PROTEIN_KINASE_DOM; 1.
PROSITE; PS00118; PROTEIN_KINASE_ST; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JUN-2001
01-JUN-2001
01-MAR-2002
                                                                                                                                                                                                                                                              MEDLINE=21173698; PubMed=11259647;

Nierman W.C., Feldblyum T.V., Laub M.T., Paulsen I.T., Nelson K.E.,

Elsen J., Heidelberg J.F., Alley M.R.K., Ohta N., Maddock J.R.,

Potocka I., Nelson W.C., Newton A., Stephens C., Phadke N.D., Ely B.,

DeBoy R.T., Dodson R.J., Durkin A.S., Gwinn M.L., Haft D.H.,

Kolonay J.F., Smit J., Craven M.B., Khouri H., Shetty J., Berry K.,

Utterback T., Tran K., Wolf A., Vamathevan J., Ermolaeva M., White O.

Salzberg S.L., Venter J.C., Shapiro L., Fraser C.M.;

"Complete genome sequence of Caulobacter crescentus.";

Proc. Natl. Acad. Sci. U.S.A. 98:4136-4141(2001).
                                                                                                                                                        Hypothetical protein; Complete SEQUENCE 213 AA; 22524 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
STRAIN-ATCC 19089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hypothetical CC3392.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9A314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9A314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kaneko T., Nakamura Y., Wolk C.P., Kuritz T., Sasamoto Watanabe A., Iriguchi M., Ishikawa A., Kawashima K., Ki Kishida Y., Kohara M., Matsumoto M., Matsuno A., Muraki Nakazaki N., Shimpo S., Sugimoto M., Takazawa M., Yamac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Anabaena sp. (strain PCC 7120).
Bacteria; Cyanobacteria; Nostocales; Nostocaceae; Nostoc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Serine/threonine kinase ALL4518.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Caulobacter crescentus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=21595285; PubMed=11759840;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Yasuda M. Tabata S.;
"Complete genomic sequence of the filamentous nitrogen-fixing"
"Complete genomic sequence of the filamentous nitrogen-fixing"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=103690;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 168
                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9 KVLDFGIDKLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KVLDFGIAKLLQSNSDQ 184
                                                                                                                                                                                                                                        CC3392;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
11; Conserv
               . Similarity
10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Complete proteome
E 520 AA; 58905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Proteobacteria; alpha subdivision; Caulobacter group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel.) (TrEMBLrel.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein CC3392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CB15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      58905 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        39.8%;
                                             39.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17,
17,
20,
           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
                                             Score 50;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 51;
Pred. No.
Pred. No. 9./;
5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. 1/;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                        proteome.
6C99F2461AEADA2E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2E6FE359B80ACF49 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              213 AA
                                             DB 16;
9.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              shima K., Kimura 'o A., Muraki A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.
                                                                               Length 213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 520;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
           Gaps
           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

```
Ş
                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                 RA Harris N.L. Harvey D. Heiman T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Liu X., Mattel B., McIntosh T.C. McLeod M.P., McPherson D.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., McPherson D.L.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Spier E., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Sylrskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Williams S.M., Woodage T., Weinstock G.M., Weissenbach J.,
RA Williams S.M., Woodage T., Weinstock G.M., Weissenbach J.,
RA Yeb R., F., Zaveri J.S., Zhan M., Zhang G., Zhao Q.A.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu X., Smith H.O.,
RT Type genome sequence of Drosophila melanogaster.";
Science 287:2185-2195(2000).
REMBL: AERO3568; AAF53937.1: -
                                             Best Loc
Matches
                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ballew R.M., Basu A., Baxendale J., Bayraktarogliu L., Beasley E.M., Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S., Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P., Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., de Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M., Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn Durbin K.J., Evangelista C.C., Ferraz C., Ferrara S., Fielschmann Fosler C., Gabriellan A.E., Garg N.S., Gelbart W.M., Glasser K., Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-20196006: PubMed-10731132;
Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
Sutton G.G., Wortman J.R., Yandell M.D., Zhang O., Chen L.X.,
Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
Abril J.F., Agbayani A., An H.-J., Andrews-Ffannkoch C., Baldwin D.,
Ballew R. M. Basin A. Havndalei Bayerserelui Bestave M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Traciheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Musc
Ephydroidea; Drosophilidae; Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CG14400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-MAY-2000 (TrEMBLrel.
01-MAY-2000 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9VII2;
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9VII2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=7227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              177
                                                                   Local
      4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GFSASTTIKRSDFGVSKYIPMVGDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GFIATLCTKVLDFGIDKLIQLIEDK
  ATLCTKVLDFGIDKLIQLIED 24
                                             10; Conser
                                                                                                                                 FBgn0032896; CG14400
233 AA; 27298 MW;
                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                 39.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13,
                                             9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
                                                                 Score 50;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                 41899178B71A1714 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25
                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       233
                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                         ٠.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
                                                                                       Length 233;
                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chandra I.,
                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          G.L.G.,
                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                K.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Σ.
                                                0
```

В

ú

ATLGTOVISYDNKRMLQLIED

```
RESULT
Q9E1W9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                        DЬ
                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 10; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9E1W9;
01-MAR-2001
01-MAR-2001
01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                       Q08743;
Q08743;
                                                                                                                                                                                                                                                                                                         01-NOV-1996 (TrEMBLrel. 01, 01-NOV-1996 (TrEMBLrel. 01, 01-JUN-2002 (TrEMBLrel. 21, Chromosome XV reading frame
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF02399; Herpes_ori_bp; 1.
SMART; SM00382; AAA; 1.
SMART; SM00487; DEXDC; 1.
SMART; SM00487; DEXDC; 1.
SMART; SM00487; DEXDC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Complete Sequence of the Simian Varicella Visubmitted (MAR-2001) to the EMBL/GenBank/DDBJ EMBL; AF275348; AAG27226.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Viruses; dsDNA viruses, no RNA stag. Alphaherpesvirinae; Varicellovirus. NCBI_TaxID=35245;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Origin binding protein.
Cercopithecine herpesvirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9E1W9
                 "Sequence and analysis of a 36.2 kb fragment from the right arm of yeast chromosome XV reveals 19 open reading frames including SNF2 (5 end), CPA1, SLY41, a putative transport ATPase, a putative ribosomal protein and an SNF2 homologue."; reast 13:479-482(1997). EMBL; Z75200; CAA99520.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                       SEQUENCE FROM N.A.
MEDLLNE=97298310; PubMed=9153758;
POITEY R., Cziepluch C., Tobiasch
Jauniaux J.C.;
                                                                                                                                                                                                                                                  Saccharomycetales; NCBI_TaxID=4932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR003593; AAA_ATPase.
InterPro; IPR001410; DEAD.
InterPro; IPR003450; Herpes_ori_bp
                                                                                                                                                                                                                 Cziepluch
                                                                                                                                                                                                                                                                                    Saccharomyces cerevisiae (Baker's yeast).
                                                                                                                                                Submitted
                                                                                                                                                                       SEQUENCE FROM
                                                                                                                                                                                             Submitted
                                                                                                                                                                                                                             SEQUENCE FROM
                                                                                                                                                                                                                                                                          Eukaryota;
                                                                                                                                                                                                                                                                                                 YOR292C
                                                                                                                                                                                                                                                                                                                                                                                                                        214 GFSSRTCTFLADLGADALIEL
                                                                                                                                                                                                                                                                                                                                                                                        13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12
                                                                                                                                                                                                                                                                                                                                                                                                                                               .1 GFIATLCTKVLDFGIDKLIQL 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                W.L.,
          S0005818;
                                                                                                                                                                                                       h C., Jauniaux J.C., E.;
                                                                                                                                                (JUL-1996) to
                                                                                                                                                                                           (JUL-1996) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrEMBLrel.
(TrEMBLrel.
2 (TrEMBLrel.
                                                                                                                                                                                                                                                                          Fungi; Ascomycota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Starnes
 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                       N.A.
                                                                                                                                                                                                                             N.A.
           YOR292C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               н.в.,
                                                                                                                                                                                                                                                              Saccharomycetaceae;
36195 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               39.1%;
                                                                                                                                                                                            the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16,
16,
20,
                                                                                                                                                the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          White M.W., Ashburn C.V., Mahalingam e Simian Varicella Virus Genome."; the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                        234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RNA stage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
Last seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last annotation
                                                                                                                                                                                                                                                                                                          Last sequence update)
Last annotation updat
ORF YOR292C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
••
                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                EMBL/GenBank/DDBJ
                                                                                                                                                                                            EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 50;
Pred. No.
                                                                                                                                                                                                                 Kordes
                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                        Saccharomycotina; Saccharomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6657D88021463CFF CRC64;
A3BD32893F595536 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence
                                                                                                   .
:
                                                                                                                                                                                                                 [F]
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        918
                                                                                                                                                                                                                                                                                                                                                                  309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Herpesviridae,
                                                                                                   Pujol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 12;
37;
                                                                                                                                                                                                                                                              Saccharomyces
                                                                                                                                                                                                                 Poirey
                                                                                                                                                                                                                                                                                                                                                                  ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                   Α.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                            databases
                                                                                                                                                databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     œ
                                                                                                                                                                                                                 R., Pujol
                                                                                                   Kordes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 816;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                  ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
RESULT 15
Q96X52
                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                 Ъ
                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR000345; CytC_heme_bind.
InterPro; IPR000719; Euk_pkinase.
InterPro; IPR005213; HGWP.
InterPro; IPR002290; Ser_thr_pkinase.
Pfam; PF03578; HGWP; 1.
Pfam; PF00069; pkinase; 1.
ProDom; PD000001; Euk_pkinase; 1.
STRAIN=N2;
Tasaki Y., Kamiya Y., Hara T., Joh T.;
Tasaki Y., Kamiya Y., Hara T., Joh T.;
Tasaki Y., Kamiya Y., Hara T., Joh T.;
"Isolation and sequencing of cDNA of genes induced by phosphate
"Isolation and sequencing of cDNA of genes induced by phosphate
deficiency in cultured mycelia of Pholiota nameko.";
deficiency in cultured mycelia of Pholiota nameko.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q943D4
Q943D4;
                                                                                                                                                                       Q96X52;
01-DEC-2001 (TrEMBLrel. 19,
01-DEC-2001 (TrEMBLrel. 19,
01-JUN-2002 (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                clone:P0443D08.";
Submitted (FEB-2001) to the EMBL/GenBank/DDBJ databases
EMBL; AP003250; BAB64139.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P0443D08.19.
Oryza sativa (Rice)
                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS00190; CYTOCHROME_C; UNKNOWN_1.
PROSITE; PS00111; PROTEIN KINASE_DOM; 1.
PROSITE; PS00108; PROTEIN_KINASE_ST; UNKNOWN_1.
ATP-binding; Transferase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-CV. NIPPONBARE Sasaki T., Matsumoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Viridiplantae; Stre
Spermatophyta; Magnoliophyta;
Ehrhartoideae; Oryzeae; Oryza
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P0443D08.19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-DEC-2001
01-DEC-2001
                                                                                                                                                                                                                            Q96X52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=4530
                                                                            SEQUENCE FROM N.A.
                                                                                                                         Eukaryota;
                                                                                                                                        Pholiota nameko.
                                                                                                                                                     PDI85
                                                                                                                                                               Phosphate transporter.
                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Oryza sativa nipponbare(GA3) genomic DNA, chromosome 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                  NCBI_TaxID=61267;
                                                                                                                Agaricales;
                                                                                                                                                                                                                                                                                        504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity hes 9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     86
                                                                                                                                                                                                                                                                                                             6 LCTKVLDFGIDKLIQL 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 ATLCTKVLDFGIDKLI 19
                                                                                                                                                                                                                                                                                     LCPKIADFGLAKLCHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATLCTNILLFGISDIL 101
                                                                                                                                                                                                                                                                                                                                       Similarity
9; Conser
                                                                                                               Fungi; Basidiomycota; Hymenomycetes; Homobasidiomycetes;
; Strophariaceae; Pholiota.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         l (TrEMBLrel.
l (TrEMBLrel.
2 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NIPPONBARE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                        ŘΑ;
                                                                                                                                                                                                                                                                                                                                                                                        70249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    T.
                                                                                                                                                                                                                                                                                                                                                 38.3%;
56.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38.3%;
                                                                                                                                                                                                                                                                                        519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19,
19,
21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yamamoto K .;
                                                                                                                                                                                                                                                                                                                                                                                        ΜW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Streptophyta:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last sequence update)
Last annotation updat
                                                                                                                                                                           Last sequence update)
Last annotation updat
                                                                                                                                                                                                   Created)
                                                                                                                                                                                                                                                                                                                                      Score 49; DB Pred. No. 41; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 49;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Liliopsida;
                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                      A6D7E4F2753F2CB3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                             551
                                                                                                                                                                                                                                                                                                                                             DB . 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Embryophyta; Tracheophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₹
                                                                                                                                                                                                                            ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Poales; Poaceae;
                                                                                                                                                                                                                                                                                                                                                             10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                       <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 309;
                                                                                                                                                                                                                                                                                                                                                             Length 629;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                      0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                      0;
```

Ţ

```
Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                                                                                                                                                                 Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the score greater to and is derived be
                                                                                                                                                                                                                                                                        Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq length: 0 . seq length: 2000000000
         A_Geneseq_101002:*
1: /SIDSZ/gcgdata/g
2: /SIDSZ/gcgdata/g
3: /SIDSZ/gcgdata/g
4: /SIDSZ/gcgdata/g
4: /SIDSZ/gcgdata/g
6: /SIDSZ/gcgdata/g
6: /SIDSZ/gcgdata/g
7: /SIDSZ/gcgdata/g
9: /SIDSZ/gcgdata/g
9: /SIDSZ/gcgdata/g
10: /SIDSZ/gcgdata/g
11: /SIDSZ/gcgdata/
12: /SIDSZ/gcgdata/
13: /SIDSZ/gcgdata/
14: /SIDSZ/gcgdata/
15: /SIDSZ/gcgdata/
16: /SIDSZ/gcgdata/
17: /SIDSZ/gcgdata/
18: /SIDSZ/gcgdata/
19: /SIDSZ/gcgdata/
19: /SIDSZ/gcgdata/
19: /SIDSZ/gcgdata/
19: /SIDSZ/gcgdata/
                                                                                                                                                                                                                                                                     Query
Match
                                                                                                                                                                                                                                                                                                                                                                                 is the number of results predicted by chance to hater than or equal to the score of the result being fived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-851-422B-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               мау
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              908470 seqs, 133250620 residues
       | SIDS2/gcgdata/geneseq/geneseqp-embl/AA1980 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-embl/AA1981 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-embl/AA1982 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-embl/AA1983 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-embl/AA1984 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-embl/AA1985 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-embl/AA1987 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-embl/AA1987 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-embl/AA1987 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-embl/AA1987 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-embl/AA1989 DAT: *
| SIDS2/gcgdata/geneseq/geneseqp-embl/AA199 DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6, 2003, 14:57:44; Search time 40.95 Seconds
                                                                                                                                                                                                                                                                        Length
    181
182
412
415
456
456
461
461
                                                                                                                                                                                                                                                                        DB
       ABB36008
AAB60289
AAR64266
AAR35761
AAR67710
AAR677710
AAP40178
AAP40222
AAP50311
                                                                                                                                                                                                                                                                        ij
       AAP50019
                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29.286 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (without alignments)
Part of the sequen
Sequence encoded b
Sequence of human
Sequence of human
Sequence of human
                                                                                                                  Peptide #3514 enco
Human factor IX (h
Human Factor-IX.
Factor IX (IX). H
Human Factor-IX.
                                                                                                                                                                                                                                                                     Description
                                                                                                                                                                                                                                                                                                                                                                                                            to have a being printed,
```

•					_	_	_			-			-		_		_		-						_									
ւ 2	ω N	32	32	32	32	32	32	ω w	ω ω	ω ω	ယ	ω ω	ω ω	ω ω	ω ω	ယ ယ	ω ω	ω ω	ω ω	ω ω	ω	3 4	34	34	37	41	46	46	40	46	46	46	46	46
9	9.	69.6	9.	9	9.	9	9.	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7		73.9					100.0		100.0			100.0	100.0
83	83	83	83			38	12	1374	997	877	581	581	575	345	250	250	212	205	138	101	96	158	63	63	367	415	462	461	461	461	461	6	461	461
22	22	22	22	22	22	22	14	22	12	22	22	22	22	22	11	11	20	22	20	21	22	12	21	20	22	20	12	23	23	22	22	21	19	11
AAM15530	AAM67720	AAM55323	ABB19946	ABB34537	ABB29363	AAM90306	AAR30472	ABG01235 ,	AAR15345	ABB62624	AAM41225	ABB11366	AAM39439	ABB63738	AAR05772	AAR05421	AAY28590	AAU47245	AAY31395	AAY86427	AAU14883	AAR11721	AAG00629	AAY11751	AAU47611	AAY03203	AAR10868	AAM50568	AAO21524	AAB60281	AAE10828	AAY97295	AAW40284	AAR05393
Peptide #1964 enco	Human bone marrow	Human brain expres		Peptide #2043 enco	Peptide #2014 enco	Human immune/haema	<pre>ICAM-3 peptide fra</pre>	Novel human diagno	Mouse bullous pemp	Drosophila melanog	Human polypeptide	Human KIAA0220 pro	Human polypeptide	Drosophila melanog	90	Human adipsin/D en	Human Factor D. H	ionibact	eptide		Novel bone marrow	/HTLV-1-11	Human secreted pro	Human 5' EST secre	Propionibacterium	Amino acid sequenc	Recombinant human	Factor IX.	in of human	factor IX	wild-type	clotting f	Factor IX	Mutant human facto

ALIGNMENTS

```
RESULT 1
ABB36008
ID ABB3
 26-MAY-2000: 2000US-0207456.
30-JUN-2000: 2000US-0608408.
30-JUN-2000: 2000US-0632366.
21-SEP-2000: 2000US-0234667.
27-SEP-2000: 2000US-0236359.
WPI; 2001-483447/52
                   Penn
                                                                                                                                                                                                                              Human; foetal liver; gene expression; single exon nucleic acid
                                                                                                                                                                                                                                                                         04-FEB-2002 (first entry)
                                                                                                                                                                                                                                                                                               ABB36008;
                                                                                                                          04-FEB-2000; 2000US-0180312.
                                                                                                                                               30-JAN-2001; 2001WO-US00669
                                                                                                                                                                    09-AUG-2001.
                                                                                                                                                                                       WO200157277-A2
                                                                                                                                                                                                                                                                                                                  ABB36008 standard; Peptide; 181 AA
                                                                                                                                                                                                                                                   Peptide #3514 encoded by human foetal liver single exon probe
                                       (MOLE-)
                   SG,
                                       MOLECULAR DYNAMICS INC
                   Hanzel DK,
                                                            2000US-0632366.
2000US-0234687.
2000US-0236359.
2000US-0024263.
                   Chen W,
                  Rank DR;
                                                                                                                                                                                                                                probe.
```

```
RESULT 2
AAB60289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
     The invention relates to nucleic acid sequences which regulate ger expression in an age-related manner and/or in a liver-specific man the invention identifies regions of the human factor IX (hFIX) ger a region of the human protein C (hPC) gene, which are age-related regulatory sequences. The hFIX age-related regulatory sequences are designated AE5' (AAF54016) and AE3' (AAF54017) and are found in the UTR (at position 2164-2165 of AAF54018) and 3' UTR (at position 2164-2165 of AAF54018).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         measuring human gene expression in a sample derived from human foetal liver. The single exon nucleic acid probe small be used for predicting, measuring and displaying gene expression in samples derived from human fetal liver. The present sequence is a peptide encoded by a single exon nucleic acid probe of the invention.
34383-35655 of Am
                                                                                                                                    Disclosure; Fig 8E; 225pp; English.
                                                                                                                                                              New regulatory elements that control age-related gene expression \cdot useful in gene therapy and for reducing Factor IX expression \cdot
                                                                                                                                                                                                                                                   Kurachi K, Kurachi S;
                                                                                                                                                                                                                                                                                                          09-JUN-1999;
                                                                                                                                                                                                                                                                                                                                      06-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                            WO200075279-A2
                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    osteoarthritis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                antisense therapy; gene therapy; thrombosis; diabetes; Alzheimer's disease; Parkinson's di
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAB60289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAB60289 standard; Protein; 182 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 27; SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      analyzing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human genome-derived single
                                                                                                                                                                                                                                                                              (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                                                                                                                                                                                                  14-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Age-related gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             96 LVDRATCLR 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LVDRATCLR 9
                                                                                                                                                                                                         2001-061708/07
)B; AAF54018.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                      2000WO-US15728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene regulation; liver-specific;
IX; hFIX; AE5'; AE3'; age-regula
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IX (hFIX) exon-encoded fragment, SEQ ID NO:12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 relates to a single exon nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ID NO 28643; 639pp +
                                                                                                                                                                                                                                                                                                          99US-0328925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                     dementia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        exon nucleic acid probes useful n human fetal liver -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 46; DB 2
Pred. No..0.43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            age-regulatable
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cardiovascular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene expression;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          expression construct;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    probe for from human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cancer; osteoporosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for
        synergistically
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                         gene
manner.
                                                                            gene,
                                                 are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                      ú
                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
```

```
AAR64266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alpha-1-antitrypsin, PEA-3 protein and reporter proteins such as luciferase. Preferred promoters for use in such age-regulatable expression vectors include the human factor IX promoter, the T7 promote the T8 promoter and the SP6 promoter. The expression vectors of the invention may be used in gene therapy to provide age-related and/or liver-specific expression of target genes. Age-regulatable constructs m be used in the treatment of such age-related conditions such as thrombosis, cardiovascular disease, diabetes, Alzheimer's disease, parkinson's disease, cancer, osteoporosis, osteoarthritis and dementia. Specifically, they may be used to express factor IX antisense mRNA in the specifically, they may be used to express factor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          treatment of thrombotic conditions associated with the natural age-related rise in factor IX expression. Transgenic cells or animals that contain vectors of the invention are useful as models of these diseases, in screening for potential therapeutic agents and for studyinormal processes such as ageing and gene expression. Fragments and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hPC gene age-related regulatory sequence is found in the 5' UTR (AAF$4081), and contains two PEA-3 (polyoma virus activator 3) elements 5'-GAGGAAA-3' and 5'-CAGGAAG-3'. The age-related regulatory sequences of the invention, along with their homologues, variants and fragments, may be used in the construction of recombinant expression vectors for the expression of a desired sequence in an age-related fashion in a host
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        to increase hFIX levels over the lifespan of an individual; however, they can independently exert effects on hFIX mRNA in an age-related manner, with AE5', acting to stabilise hFIX mRNA, and AE3' acting to increase hFIX mRNA levels, over time. AE5', also directs liver-specific expression. The hPC gene age-related regulatory sequence is found in the 5' UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           expression vectors include those encoding proteins involved in bleogeniation (e.g., the pro-coagulants factor IX and factor VIII, anti-coagulants protein C and antithrombin III), human
                                                                                                                                                                                                                                                           Key
                                                                                                                                                                                                                                                                                                                                                                                               Human Factor-IX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  homologues of age-related regulatory sequences, are useful as probes to detect, isolate or identify other such sequences in samples. The present sequence represents a fragment of hFIX.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cell. Preferred target genes for expression in such age-regulatable
Modified-site
                                                         Modified-site
                                                                                                                   Modified-site
                                                                                                                                                                             Modified-site
                                                                                                                                                                                                                                       Domain
                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                    coagulant;
                                                                                                                                                                                                                                                                                                                                                      Factor-IX;
                                                                                                                                                                                                                                                                                                                                                                                                                                       18-JUL-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAR64266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR64266 standard; protein; 412 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LVDRATCLR 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                    polymer conjugate; hemophilia-B; blood-clotting; polyethylene glycol; PEG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             182 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
clarity 100.0%;
conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
/note-
.16
                                                                                                                                                                                                                                       Location/Qualifiers
1..46
                                                                                                                                                      /label•
                                                                                                                                                                                             /note-
                                                                                                                                                                                                                  /label= Gla_domain
                                       /label= OTHER
                                                                            note-
                                                                                                 /label≖
                                                                                                                                    note.
                                                                      "gamma-carboxyglutamic
              "gamma-carboxyglutamic acid"
                                                                                                                                                                                             "gamma
                                                                                                                               "gamma-carboxyglutamic
                                                                                              OTHER
                                                                                                                                                        OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 46; DB 2;
Pred. No. 0.43;
Mismatches
                                                                                                                                                                                             carboxy-glutamate-rich domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 182;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in blood
VIII, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       promoter,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 studying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the
```

```
Disulfide-bond
Disulfide-bond
Disulfide-bond
                                                                                                                                                                                                                                                                                                                                         Disulfide-bond Disulfide-bond
Human Factor-IX is a single chain glycoprotein having the given in AAR64266. Conjugates of Factor-IX with polymers
                        Disclosure; Fig. 1;
                                       New Factor IX-non-antigenic polymer conjugates treatment of haemophilia B
                                                                WPI; 1995-036423/05
                                                                                 Gilbert CW,
                                                                                                                08-JUN-1993;
                                                                                                                                07-JUN-1994;
                                                                                                                                                22-DEC-1994.
                                                                                                                                                                WO9429370-A
                                                                                                                                                                                                        Cleavage-site
                                                                                                                                                                                                                         Modified-site
                                                                                                                                                                                                                                        Modified-site
                                                                                                                                                                                                                                                        Cleavage-site
                                                                                                                                                                                                                                                                        Region
                                                                                                                                                                                                                                                                                         Region
                                                                                                                                                                                                                                                                                                 Disulfide-bond
                                                                                                                                                                                                                                                                                                        Disulfide-bond
Disulfide-bond
                                                                                                                                                                                                                                                                                                                        Disulf
                                                                                                                                                                                                                                                                                                                                Disulfide-bond
                                                                                                                                                                                                                                                                                                                                                         Disulfide-bond
                                                                                                                                                                                                                                                                                                                                                                                                         Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                 Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Modified-site
                                                                                                (ENZO-)
                                                                                                                                                                                                                                                                                                                         .de-bond
                                                                                                 ENZON
                                                                                 Hallahan
                                                                                                                93US-0073531.
                                                                                                                                94WO-US06388
                                                                                                                                                                                                                                                                                                                       93..107
109..122
130..286
                                                                                                                                                                                                                                                                                                                                                                                                         /note-
39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note-
29
                                                                                                                                                                                                                                                                                                                                                                                  /note=
17..22
                                                                                                                                                                                         /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note=
                                                                                                                                                                                                                /note= "PEG
                                                                                                                                                                                                                                                                /label- Activation_region
                                                                                                                                                                                                                                                                                /label = EGF-like_region
                                                                                                                                                                                                                                                                                                                                                                                                                         /label- OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'note*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /label- OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /label= OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /label= OTHER
                                                                                                                                                                                ∕label≖ Catalytic_domain
                                                                                                                                                                                                                               note= "PEG"
                                                                                                                                                                                                                                                                                                                                                                                                 'label- OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                        'note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                'label= OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                'note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'label= OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'label=
                                                                                                                                                                                         ..412
                       27pp; English
                                                                                 TW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "gamma-carboxyglutamic acid"
                                                                                                                                                                                                                                                                                                                                                                                                                "gamma-carboxyglutamic acid"
                                                                                                                                                                                                                                                                                                                                                                                                                                       "gamma-carboxyglutamic acid"
                                                                                                                                                                                                                                                                                                                                                                                                                                                               "gamma-carboxyglutamic acid"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "gamma-carboxyglutamic acid"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "gamma-carboxyglutamic acid"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "gamma-carboxyglutamic acid"
                                                                                                                                                                                               "Factor XIa cleavage site"
                                                                                                                                                                                                                                                "Factor-XIa cleavage site"
                                                                                                                                                                                                                                                                                                                                                                                        "gamma-carboxyglutamic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "gamma-carboxyglutamic acid"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER
                                                                                                                                                                                                                attachment site"
                                                                                                                                                                                                                               attachment site'

    useful

                                                for
such as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 4
AAR35761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SXS
                                                                                                                                                                                                                                                                                                                                                                 X S X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                Griffin JH,
                                                                                                                                                                               Peptide
                                                                                                                                                                                               Peptide
                                                                                                                                                                                                             Peptide
                                                                                                                                                                                                                                                               Peptide
                                                                                                                                                                                                                                                                                                                Region
                                                                                                                                                                                                                                                                                                                              Region
                                                                                                                                                                                                                                                                                                                                                                                                                                       24-SEP-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAR35761;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                               27-MAY-1993
                                                                                                                               WO9309804-A
                                                                                                                                                                                                                               Peptide
                                                                                                                                                                                                                                               Peptide
                                                                                                                                                                                                                                                                               Peptide
                                                                                                                                                                                                                                                                                                Peptide
                                                                                                                                                                                                                                                                                                                                               Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
```

```
Serine protease derived-polypeptide(s) and anti-peptide antibodies - for inhibiting coagulation and assaying for presence of serine protease in fluid samples
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PC; protein C; IX; Factor IX; X; Factor X; PT; prothrombin; VII; Factor VII; CT; chymotrypsinogen; SP; serine protease; binding; exosite; catalytic activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Factor IX (IX)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR35761 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   polyethylene glycol show reduced immunogenicity
                                                     WPI; 1993-182244/22
                                                                                                                                 18-NOV-1991;
                                                                                                                                                         18-NOV-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                      (SCRI ) SCRIPPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        327 LVDRATCLR 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            412 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
llarity 100.0%;
Conservative
                                                                             Mesters
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                               91US-0793989
                                                                                                                                                         92WO-US10242
                                                                                                      RES INST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note= "ractor IX heavy chain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note= "Factor IX light chain"
146..180
                                                                                                                                                                                                                                                                                        /note= "pref. PC
271..292
                                                                                                                                                                                                                                                                             /note-
                                                                                                                                                                                                                                                                                                                  400..414
                                                                                                                                                                                                                                                                                                                                         400..409
                                                                                                                                                                                                                                                                                                                                                                       395..409
                                                                                                                                                                                                                                                                                                                                                                                                 321..330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                              /note=
                                                                                                                                                                                                                                                                                                                                                        /note=
                                                                                                                                                                                                                                                                                                                                                                               /note- "pref.
                                                                                                                                                                                                                                                                                                                                                                                                            /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                     /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein; 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ..336
                                                                                                                                                                                                                                                                                                                                                                                                                           . 330
                                                                              RM;
                                                                                                                                                                                                                                                                                                                                                     "pref.
                                                                                                                                                                                                                                                                                                                                                                                                          "pref. PC
                                                                                                                                                                                                                                                                                                                              "pref.
                                                                                                                                                                                                                                                                                                                                                                                                                                     "exosite
                                                                                                                                                                                                                                                                                                                                                                                                                                                               "exosite
                                                                                                                                                                                                                                                                            "claim 6,
                                                                                                                                                                                                                                 'claim 6, page 137-138 describes an antibody that reacts with Factor IX; fragments 316-330, 321-330, 395-409, 400-409 and 400-414 but not with fragment 271-292"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 46; DB 1
Pred. No. 0.96;
                                                                                                                                                                                                                                                                                                                              PC
                                                                                                                                                                                                                                                                                                                                                      PC
                                                                                                                                                                                                                                                                                                                                                                                  PC
                                                                                                                                                                                                                                                                                                                                                                                                                                       Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                   polypeptide; claim 2,
                                                                                                                                                                                                                                                                                                                             polypeptide;
                                                                                                                                                                                                                                                                                                                                                        polypeptide;
                                                                                                                                                                                                                                                                                                                                                                                                         polypeptide; claim 2,
                                                                                                                                                                                                                                                                                                                                                                                polypeptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 16;
                                                                                                                                                                                                                                                                                                                              claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                      claim 2,
                                                                                                                                                                                                                                                                                                                                                                                claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 412;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                              Ņ
                                                                                                                                                                                                                                                                                                                                                                                2
              for
                                                                                                                                                                                                                                                                                                    page 136'
                                                                                                                                                                                                                                                                                                                              page
                                                                                                                                                                                                                                                                                                                                                     page 136'
                                                                                                                                                                                                                                                                                                                                                                                page
                                                                                                                                                                                                                                                                                                                                                                                                         page 136"
                                                                                                                                                                                                                                                                                                                               136"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

```
RESULT 5
AAR67710
ID AAR6
В
                    á
                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         무
                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     coagulation (they prevent binding of serine protease to natural substrates), esp. when admin. to give an intravascular blood concn. of 0.1-100 (pref. 0.5-10) microw.

NB: Sequences corresp. to SEQ ID NO 6, 7, 8 and 9 are described in the specification but have not yet been added to the SEQUENCE
                                                                                                                                                                                                                          WPI; 199
N-PSDB;
                                                                                                                Human Factor*IX was used to construct recombinant adenovirus vectors that produced therapeutic levels of the clotting factor when administered to an animal host, potentially providing hemophilia B
                                                                                                                                                                               New adenoviral vectors for treatment of haemophilia - contg. DNA sequence encoding a clotting factor, partic. Factor VIII Factor IX \,
                                                                                    Sequence
                                                                                                        gene
                                                                                                                                                           Disclosure; Fig. 11A-11B; 116pp; English
                                                                                                                                                                                                                                                        Connelly S,
                                                                                                                                                                                                                                                                              (GENE-) GENETIC THERAPY INC.
                                                                                                                                                                                                                                                                                                   10-JUN-1993;
25-MAR-1994;
                                                                                                                                                                                                                                                                                                                                  13-APR-1994;
                                                                                                                                                                                                                                                                                                                                                       22-DEC-1994.
                                                                                                                                                                                                                                                                                                                                                                           W09429471-A.
                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                    adenovirus; vector.
                                                                                                                                                                                                                                                                                                                                                                                                                             Factor-IX; blood-clotting; hemophilia
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human Factor-IX.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20-JUL-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR67710;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAR67710 standard; Protein; 454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The PC polypeptides indicated in the Features Table inhibit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure;
369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      330 LVDRATCLR 338
                                         Local Similarity
hes 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 LVDRATCLR 9
                    1 LVDRATCLR 9
                                                                                                                                                                                                                            1995-036495/05.
DB; AAQ76017.
LVDRATCLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
9; Conserv
                                                                                    454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         415 AA;
                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Page 126-128; 149pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                        Kaleko M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
377
                                                                                    ξ,
                                                                                                                                                                                                                                                                                                  93US-0074920.
94US-0218335.
                                                                                                                                                                                                                                                                                                                                  94WO-US04075
                                                    100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                                                          Smith
                                          0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                   Score 46; DB Pred. No. 1.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 46; DB 1
Pred. No. 0.96;
                                                                                                                                                                                                                                                           -3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                              Θ,
                                                              DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                                             gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                         0
                                                             Length 454;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 415;
                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                          o a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
RESULT 7
AAP40222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RAP4017B
AAP4017B
IID AAP4
XX
AC AAP4
XX
AP7
BT 11-F
XX
BT PART
XX
Chri
KW Chri
KW diag
XX
HOMO
SX
FH Key
FT Pept
                                                                                                                                                                 ₽
                                                                                                                                                                                            δÃ
DX DX XX X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               X PD
                                                                                                                                                                                                                          Query Match
Best Local s
Matches
                                                                                                                                                                                                                                                                                                                              The inventors claim DNA molecules comprising part or all of the human factor IX DNA. The invention also includes cDNA derived from human factor IX RNA. Specifically claimed are: recombinant DNA (the phage present in clone lambda HIX-1) deposited as NCIB NO. 11749; Recombinant DNA in which the cloning vehicle is the modified pAT 153 plasmid present in E.coli NCIB NO. 11747; Recombinant DNA in which the bovine factor IX DNA sequence is contained in the recombinant bNA transformed into E.coli to form a clone deposited as NCIB NO.
                            13-FEB-1992
                                                          AAP40222;
                                                                                      AAP40222 standard; Protein; 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Recombinant DNA cloning vehicles - useful in prodn. of factor polypeptide and of diagnostic probes for Christmas disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Part of the sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAP40178 standard; Protein; 456
                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-PSDB; AAN40142.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1984-049331/08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Brownlee G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  06-MAY-1983;
04-AUG-1982;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                03-AUG-1983;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Christmas disease; therapy; haemophilia; factor IX; blood clotting;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11-FEB-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAP40178;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example; Fig 9; 71pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (NATR ) NATIONAL RES (BROW/) BROWNLEE G G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-FEB-1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO8400560-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Peptide
                                                                                                                                                                 371 LVDRATCLR 379
                                                                                                                                                                                              1 LVDRATCLR 9
                                                                                                                                                                                                                           Similarity
9; Conser
                                                                                                                                                                                                                                                                                      456 AA;
                          (first entry)
                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Choo KH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83GB-0012491.
82GB-0022485.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                83WO-GB00191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
1:41
42..456
                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEV CORP.
                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                          Score 46;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ą
                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X
                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                      Length 456
                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                             0
```

Sequence encoded by part of the sequence of human factor IX cDNA

ĺ

```
QΥ
                                                                                                                                                                                                                                                                                                                                 AAP50311
                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-MAY-1983;
04-AUG-1982;
03-AUG-1983;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Prodn. of sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Key
Peptide
                                                                                                         W08505125-A
                                                                                                                                        Homo sapiens
                                                                                                                                                                        Blood clotting; haemophilia
                                                                                                                                                                                                         Sequence of
                                                                                                                                                                                                                                            03-SEP-1991
                                                                                                                                                                                                                                                                              AAP50311;
                                                                                                                                                                                                                                                                                                          AAP50311 standard; Protein; 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence pref. at least 50 nucleotides long esp. 75-27000 nucleotides. A cloning vector contg. foreign DNA is also claimed. The foreign sequence pref. includes the whole of an exon sequence of the human factor IX genome. The cloning vehicle may be a modified pAT 153 plasmid. Also claimed is a labelled diagnostic probe comprising a DNA molecule having a single- or double-stranded probe sequence of 15 to 10000 nucleotides long Factor IX DNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The inventors claim a recombinant DNA having a human factor IX sequence pref. at least 50 nucleotides long, esp. 75-27000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Brownlee GG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            03-AUG-1983;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07-MAR-1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GB2125409-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Haemophilia;
       09-MAY-1984;
                                      09-MAY-1984;
                                                                       21-NOV-1985.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Example; Fig 9; 49pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1984-057898/10.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (NATR ) NATIONAL RES DEV CORP
                                                                                                                                                                                                                                                                                                                                                                                              371 LVDRATCLR 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
mes 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                              1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAN40177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      artificial human factor for host transformation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Christmas disease; diagnosis; treatment.
                                                                                                                                                                                                         human factor IX,
                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Choo KH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83GB-0012490.
82GB-0022486.
83GB-0020975.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA;
       84FR-0007125
                                        84WO-0007125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              83GB-0020975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /label=
42..456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 46; DB
Pred. No. 1.1;
                                                                                                                                                                                                           encoded
                                                                                                                                                                                                                                                                                                             AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IX -

    by use of recombinant
cultivation

                                                                                                                                                                                                         by DNA FIX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 456;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 9
AAP50302
ID AAP5
       CCC X PX P PX X P
                                                                                                                                                                                                                                                                                                                                                                                                                                              XX
SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        X P X X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                           PA
XX
                                                                                                                                                                                                                                                                                                            PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 9; Conserv
The factor IX coding SQ (AAN50351) is first inserted into a non-essential region of viral DNA, cloned in a bacterial plasmid. A double-reciprocal recombination procedure is then used to transfer the insert into the viral genome where it is propagated and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAP50302 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 03-SEP-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1985-302926/48
N-PSDB; AAN50362.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Jaye M,
                                                                                                                                                                        N-PSDB; AAN50351.
                                                                                                                                                                                                                       De La
                                                                                                                                                                                                                                                                                                          05-OCT-1984;
22-MAY-1984;
                                                                                                                                                                                                                                                                                                                                                                                                                            WO8505376-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Blood clotting;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence of human factor IX.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAP50302;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (TRAN-) TRANSGENE SA.
(JAYE/) JAYE M.
                                                                                                                                                                                      WPI; 1985-316884/50.
                                                                                                                                                                                                                                                       (TRAN-) TRANSGENE SA.
(DSAL/) DE LA SALLE H.
                                                                                                                                                                                                                                                                                                                                                         29-MAY-1985;
                                                                                                                                                                                                                                                                                                                                                                                            05-DEC-1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      factor IX SQ (AAN50362).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     376 LVDRATCLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 LVDRATCLR 9
                                                                                                                                                                                                                       Salle H,
                                                                                  Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               De La Salle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       461 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                      2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     384
                                                                                                                                                                                                                                                                                                          84FR-0015294
84FR-0007959
                                                                                                                                                                                                                                                                                                                                                           85WO-1104408
                                                                                  59pp; French
                                                                                                                                                                                                                       Drillien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             haemophilia B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ħ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . 0 %
                                                                                                                                                                                                                       ₽,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

```
The inventors claim a vector which comprises a DNA SQ coding for factor IX (FIX) and elements providing expression of this SQ in host cells. The prepn. of DNA FIX is as follows. Phyadenylated mRNA is isolated from human liver, used to make ss-DNA which is digested with Sl and the fragments over 1 kb cloned in pBR 322. Clones are selected by hybridisation with a 52-mer probe corresp. to the bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Fig 3; 98pp; French.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cloning and expression vector for bacteria, yeast or mammalian cells
Vector for expressing factor 9 in poxvirus genome in which factor 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein; 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tolstoshev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 46; DE
Pred. No. 1.1
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cells
                                                                                                                     Altenburger W,
                                                                                                                                                                                                                                                                                                                                                                                                                                       vaccinia
vertebrate cells gene is inserted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Φ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB (
                                                                                                                                                                                                                                                                                                                                                                                                                                       vector;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lecocq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6;
                                                                                                                     Tolstoshev P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       - for transforming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JP,
                                                                                                                                                                                                                                                                                                                                                                                                                                       cowpox vector
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 461;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                    contg
                                                                                                                   Lecocq JP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
```

```
RESULT 11
AAR05393
                                                                                                                Query Match
Best Local Similarity
Watches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 10
                                                                                     밁
                                                                                                     Q
                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SXC
   S X S X E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ouery Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                             The inventors claim vectors for expressing factor IX, or an analogous protein in vertebrate cells which consist of the genome poxvirus into which a gene coding for factor IX or an analogous protein has been inserted. Cultivation of infected cells produces very pure factor IX (a deficiency of which causes haemophilia B).
 12-OCT-1990
                    AAR05393;
                                     AAR05393 standard; protein; 461 AA
                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                        Vector for expressing factor 9 in vertebrate pox:virus genome contg. factor 9 gene
                                                                                                                                                                                                                                                                                     WPI; 1985-298122/48.
N-PSDB; AAN50049.
                                                                                                                                                                                                                                                                                                                                                               05-OCT-1984;
22-MAY-1984;
                                                                                                                                                                                                                                                                                                                                                                                                                              EP162782-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence of human factor IX.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        06-SEP-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAP50019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAP50019 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    expressed
                                                                                                                                                                                                                                       Example; Fig 2; 56pp; French.
                                                                                                                                                                                                                                                                                                                         de la Salle H,
                                                                                                                                                                                                                                                                                                                                                                                          21-MAY-1985;
                                                                                                                                                                                                                                                                                                                                                                                                             27-OCT-1985
                                                                                                                                                                                                                                                                                                                Lecocq JP;
                                                                                                                                                                                                                                                                                                                                            (TRAN-) TRANSGENE SA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Haemophilia B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         376 LVDRATCLR 384
                                                                                    376 LYDRATCLR 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
nes 9; Conserv
                                                                                               1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 LVDRATCLR 9
                                                                                                                                                              461 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   461
                                                                                                                       100.0%;
ilarity 100.0%;
Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
ilarity 100.0%;
Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
(first entry)
                                                                                                                                                                                                                                                                                                                                                              84FR-0015294.
84FR-0007959.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   λ
                                                                                                                                                                                                                                                                                                                                                                                          85EP-0400999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   blood clotting;
                                                                                                                                                                                                                                                                                                                         Drillien R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Protein; 461 AA
                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                         Altenburger W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 46; DB
Pred. No. 1.1;
                                                                                                                                  Score 46; DB Pred. No. 1.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   factor IX.
                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 6;
                                                                                                                                           6.
                                                                                                                                                                                                                                                                  cells -
                                                                                                                                                                                                                                                                                                                         Toltoshev P;
                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 461;
                                                                                                                                           Length 461;
                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                 comprises
                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                            of.
                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
RESULT 12
AAW40284
                                                                               B
                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                          SXCCCXXXTTX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FFFXOXXX
                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mutation
mutation
                                                                                        Key
Peptide
                                                                                                                                        Factor X; factor IX; serine protease activity; catalytic domain; ZAD; zymogen-activating domain; epidermal growth factor-like domain; EGF1; EGF2; regulator; coagulation; fibrinolysis; homeostasis; X-ray structure; detection; drug modelling; restriction protease.
                                                                                                                                                                                                                                                                                                                                                                                                           The slightly altered gene product has a higher ratio of FIX activity to FIX yield. \dot{}
                                                                                                                                                                                                                                                                                                                                                                                                                                                            With mutation in pro coding sec
W09747737-A1.
                             Domain
                                                Domain
                                                                     Protein
                                                                                                                                                                                            Human Factor IX protease
                                                                                                                                                                                                                16-JUN-1998
                                                                                                                                                                                                                                    AAW4 0284;
                                                                                                                                                                                                                                                       AAW40284 standard; Protein; 461 AA
                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; ; p; French
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1990-180758/24.
N-PSDB; AAQ05393.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Meullien P;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-NOV-1988;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      07-NOV-1989;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EP373012-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mutant human factor IX
                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (TRAN-) TRANSGENE SA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13-JUN-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Factor IX;
                                                                                                                                                                                                                                                                                                          376 LVDRATCLR 384
                                                                                                                                                                                                                                                                                                                   1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          haemophilia B; vaccina; ds
                                                                                                                                                                                                                                                                                                                                                                                         461 AA;
                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                (first entry)
                                                         /label signal
47..461
/label Factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  88FR-0014635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     89EP-0403065
                          /label- EGF2
227..324
                   227..324
/label= c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifier replace(44, Pro) replace(47, Tyr)
                                                                                          Location/Qualifiers
1..46
                                                   130..
                                                                                                                                                                                                                                                                                                                                                          100.0%;
                                                 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (FIX).
                   catalytic domain
                                                                                                                                                                                                                                                                                                                                                  0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence
                                                                                                                                                                                                                                                                                                                                                 Score 46; DB
Pred. No. 1.1
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                          DB .
                                                                                                                                                                                                                                                                                                                                                                    11;
                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                      461;
                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                  0
```

```
RESULT 13
AAY97295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
""" 9; Conserv
Ω
                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            06-JUL-1996;
11-JUN-1996;
22-JUN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          symogen-activating domain (zAD), N-terminally bound to an EGF1 and/or EGF2 domain (EGF = epidermal growth factor-like domain). Such proteins are used to identify activators/inhibitors of factor IX family proteins (potentially useful as regulators of coagulation, fibrinolysis and homeostasis). The protein in zymogen form is also useful in assays for detecting factor IXa activity in aqueous solution (specifically in body fluids). The protein can be used to produce co-crystals with protease variants or inhibitors for X-ray structural analysis and drug modelling and as restriction proteases in biotechnology. These truncated proteins have the same specificity as factor IX family proteases and can be produced in prokaryotes in a form that allows production of active enzymby conversion to native form and enzymatic cleavage.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This sequence represents a human factor IX protease. This protein is used in the construction of a novel non-glycosylated protein and truncated and zymogen forms of this protein, which have serine protease activity. The protein is composed of various domains from a factor IX family protein, namely a catalytic domain (CD) N-terminally bound to a protein, namely a catalytic domain (CD) N-terminally bound to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Fig 4; 49pp; German
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Non-glycosylated, truncated forms of factor IX family protein with serine protease activity - used to screen for specific modulators and to assay factor IXa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hopfner K, Kopetzki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-DEC-1997
                                                                                                                                                                                                                                               03-JAN-2001
                                                                                                                                                                                                                                                                                                              AAY97295 standard; Protein; 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (BOEF ) BOEHRINGER MANNHEIM GMBH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11-JUN-1997;
                                                                                                                              Recombinant DNA; gene therapy; hormone responsive element; transgene; HRE; haemophilia; clotting factor ix; vaccine; regulation; breast cancer; ovarian cancer; prostate cancer; von Willebrand disease; cystic fibrosis; hormone; receptor;
                                                                                                                                                                                                              Human clotting
               24 - AUG - 2000
                                               WO200049147-A1
                                                                                Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                           376 LVDRATCLR 384
                                                                                                                                                                                                                                                                                                                                                                                                                1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1998-052304/05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               461 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96EP-0110959.
96EP-0109288.
96EP-0110109.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97WO-EP03027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 46; DB Pred. No. 1.1;
                                                                                                                                                                                                                                                                                                              Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 19; Length 461;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of active enzyme
                                                                                                                                human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
Q
B
                                                                                                                                                                                                                                                                  AAE10828
                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       treating blood clotting disorders such as haemophilia A or B on administration to an organism or to a cellular system. The constructs have applications in gene therapy for treating haemophilia when the transgene encodes a clotting factor such as clotting factor IX. The advantage of this systeme is that the hormone-hormone receptor complex contains a hormone receptor that the hormones activated after binding of its specific hormone. The hormone receptor in the activated state is able to recognise and bind to its specific hormone responsive element. The presence of the hormone responsive element on the nucleic acid carrying a transgene encourages binding of a hormone receptor complex. Thus the activated hormone receptor and the second carrying the transgene and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The constructs can be used to up-regulate or down-regulate target genes and for the delivery of vaccines. The constructs preferably comprise a transgene which encodes a protein which is lacking in a variety of genetic disorders or involved in conditions related in inappropriate responses to hormones, for example hormone-dependent cancers such as breast, ovarian, and endometrial cancers and prostate cancer. The transgene may also be used to replace a defective gene resulting in such genetic disorders as haemophilia, von Willebrand disease, and cystic fibrosis. Vectors comprising these constructs where the transgene is human clotting factor IX can be used for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      responsive element (HRE) and a transgene (T). Alternatively the nucleic acid construct, comprises at least one HRE and a transgene where one of the HREs is not functionally linked to the transgene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Page 81-83; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel nucleic acid construct useful in gene therapy comprising an hormone responsive element and transgene in which the hormone responsive element is not functionally linked to the transgene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2000-549273/50
N-PSDB; AAA53835.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-FEB-2000; 2000WO-EP01368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (THER-) THERAGENE BIOMEDICAL LAB GMBH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19-FEB-1999;
19-FEB-1999;
                                                                                                                                Human wild-type factor IX protein.
                                                                                                                                                                      18-DEC-2001
                                                                                                                                                                                                              AAE10828;
                                                                                                                                                                                                                                                  AAE10828 standard; Protein; 461 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New nucleic acid constructs are described which comprise an hormone
                                                                        factor IX; therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           normone known to interact with the cell membrane.
                                                                                                                                                                                                                                                                                                                                                376 LVDRATCLR 384
                                                                                                                                                                                                                                                                                                                                                                                  1 LVDRATCLR 9
                                                                                            haemostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     461
                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99DE-1007099
99US-0120848
                                                                          haemophilia A.
                                                                                            coagulant; blood clotting factor;
                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 46;
100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                               21;
                                                                                                                                                                                                                                                                                                                                                                                                                        0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 461;
                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                              factor VIII;
                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
```

0

WO200170968-A2

27-SEP-2001

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of recombinant human blood clotting factors, especially factors VIII and IX, using an immortalised cell line stably expressing viral transcription activators and carrying a vector comprising a promoter and a sequence encoding the blood coagulation factor. The factor VIII mutein or a gene transfer vector is used in the preparation of agents for treating haemophilia, especially haemophilia A. The present sequence is human wild-type factor IX protein encoded by vector pTGF36hyg.
                                             Kurachi K,
                                                                      (UNMI ) UNIV MICHIGAN
                                                                                               9-JUN-1999;
                                                                                                                     06-JUN-2000; 2000WO-US15728
                                                                                                                                                                     WO200075279-A2
                                                                                                                                                                                                                             Age-related gene regulation; liver-specific; gene expression; human factor IX; hFIX; AES;, Age-regulatable expression construct; antisense therapy; gene therapy; thrombosis; cardiovascular disease; diabetes; Alzheimer's disease; Parkinson's disease; cancer; osteoporosis
                                                                                                                                                                                                                                                                                         Human factor IX (hFIX) protein.
                                                                                                                                                                                                                                                                                                                     30-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                  AAB60281 standard; Protein; 461 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 21; Page 73-74; 104pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Recombinantly producing human blood coagulation factors VIII and use in treating hemophilia - \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2001-590175/66
N-PSDB; AAD18173.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22-MAR-2000;
08-MAY-2000;
                                                                                                                                                                                            Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention relates to an improved method for the production
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21-MAR-2001; 2001WO-EP03220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hauser C,
                                                                                                                                                                                                                                                                                                                                                                                                                              376 LVDRATCLR 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 LVDRATCLR 9
                      2001-061708/07.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OCTAGENE GMBH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hoerster A,
                                             Kurachi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000EP-0106225
2000US-203249P
                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð,
                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Schroeder C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lehnerer M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 461;
                                                                                                                                                                                                                               cancer; osteoporosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

망 δõ

376 LVDRATCLR 384

1 LVDRATCLR 9

Query Match Matches

Local

Similarity 9; Conser

Conservative

0.

100.0%;

Score 46; DB Pred. No. 1.1; Mismatches

22; 0

Length 461;

0

0

Sequence

461 AA;

Search completed: May Job time: 42.95 secs

δ

2003, 15:01:01

```
cell. Preferred target genes for expression in such age-regulatable cexpression vectors include those encoding proteins involved in blood coagulation (e.g., the pro-coagulants factor IX and factor VIII, and the capture of the protein C and antithrombin III), human capture in the protein C anti-coagulants protein C and antithrombin III), human capture in the proteins such as completed in the protein C and antithrombin III), human capture in the proteins such as completed in the protein C appression vectors include the human factor IX promoter, the T? promoter. The expression vectors of the C invention may be used in gene therapy to provide age-related and/or C iver specific expression of target genes. Age-regulatable constructs may be used in the treatment of such age-related conditions such as continuous cardiovascular disease, diabetes, Alzheimer's disease, C Parkinson's disease, cancer, osteoporosis, osteoarthritis and dementia. Specifically, they may be used to express factor IX antisense mRNA in the treatment of thrombotic conditions associated with the natural C age-related rise in factor IX expression. Transgenic cells or animals c that contain vectors of the invention are useful as models of these C diseases, in screening for potential therapeutic agents and for studying normal processes such as ageing and gene expression. Fragments and content of identify other such sequences, are useful as probes to detect, isolate or identify other such sequences, are useful as probes to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to nucleic acid sequences which regulate gene CC expression in an age-related manner and/or in a liver-specific manner. CC The invention identifies regions of the human factor IX (hFIX) gene, and CC a region of the human protein C (hPC) gene, which are age-related CC regulatory sequences. The hFIX age-related regulatory sequences are designated AE5 (AAF54018) and AE3 (AAF54017) and are found in the 5 (CC UTR (at position 2164-2165 of AAF54018) and 3 (UTR (at position 264-2165 of AAF54018) and age-related manner, CC unindependently exert the lifespan of an individual; however, they CC can independently exert effects on hFIX mRNA in an age-related manner, CC with AE5 acting to stabilise hFIX mRNA, and AE3 acting to increase hFIX CC mRNA levels, over time. AE5 also directs liver-specific expression. The PC gene age-related regulatory sequence is found in the 5 (UTR CC (AAF54081), and contains two PEA-3 (polyoma virus activator 3) elements CC 5 (AAF54081), and 5 (CAGGAAA-3) (The age-related regulatory sequences of the invention, along with their homologues, variants and fragments, may be used in the construction of recombinant expression vectors for the expression of a desired sequence in an age-related fashion in a host call the construction of recombinant and present the construction of the construction age-related fashion in a host call the construction of recombinant age-related fashion in a host call the construction of the construction age-related fashion in a host call the construction of the construction age-related fashion in a host call the construction age-related fashion in a host call the construction of the construction age-related fashion in a lost call the construction of the construction age-related fashion in a lost call the construction of t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New regulatory elements that control age-related gene expression, useful in gene therapy and for reducing Factor IX expression
                                                                                                                      isolate
                                                                              represents
                                                                                                                 or identify other such sequences in samples. The present
```

```
Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
            5
10
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           08
80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Issued_Patents_AA:*
1: /cgn2_6/ptodata/1
2: /cgn2_6/ptodata/1
3: /cgn2_6/ptodata/1
        100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-851-422B-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BLOSUM62
Gapop 10.0 , Gapext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              262574 seqs, 29422922 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0
100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   May 6, 2003, 14:59:30 ; Search time 14.4 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
/cgn2_6/ptodata/1/iaa/backfiles1.pep:*
        GenCore version 5.1.4_p5_4578 (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DΒ
                                                                                        222404004444352
    US-08-944-483-61

US-08-270-584A-2

US-08-568-031-2

US-08-565-192-2

US-08-966-319-2

US-09-153-304-2

US-09-199-793-2

US-09-199-793-2

US-08-487-113D-120

US-08-720-420A-120

US-08-720-420A-120

US-08-240-915-8

US-09-591-435-8

US-08-314-615-1
                                                                                                                                                                                                                                                                                                                                                                                                              US-08-797-842-11

US-08-947-842-12

US-08-944-483-48

US-08-073-531B-1

US-08-955-471-2

US-08-955-471-2

US-08-766-288-1
                                                                                                                                                                                                                                                                                                                                  PCT-US92-10242-2
US-08-742-877-2
US-09-053-871A-21
5521070-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IJ
                                                                                                                                                                                                                                                    5223425-8
                                                                                                                                                                                                                                                                                                                 US-08-944-483-44
                                                                                                                                                                                                                                                                                            5223425-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (without alignments)
18.389 Million cell updates/sec
Sequence 61, Appli
Sequence 2, Appli
Sequence 120, App
Sequence 120, Appli
Sequence 8, Appli
Sequence 8, Appli
Sequence 1, Appli
                                                                                                                                                                                                                                                                                                                                               Sequence 11, Appl
Sequence 12, Appl
Sequence 48, Appl
Sequence 1, Appli
Sequence 2, Appli
Sequence 21, Appli
                                                                                                                                                                                                                                                    Patent No.
                                                                                                                                                                                                                                                                                                                                Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Description
                                                                                                                                                                                                                                                                         Patent
                                                                                                                                                                                                                                                                                          Patent
                                                                                                                                                                                                                                                                                          Sequence 44, Appl
atent No. 5223425
                                                                                                                                                                                                                                                                       No.
                                                                                                                                                                                                                                                  5223425
5223425
                                                                                                                                                                                                                                                                                                                                21, Appl
5521070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 1
US-08-797-842-11
      Matches
```

32 69.6 547 1 US-08 473 981A-6 32 69.6 547 1 US-08 433-010-1 32 69.6 547 1 US-08 483-389-1 32 69.6 547 2 US-08-483-389-1 32 69.6 547 2 US-08-483-389-1 32 69.6 547 2 US-08-483-932-1 32 69.6 547 2 US-08-473-503-1 32 69.6 547 2 US-08-473-932-1 32 69.6 547 2 US-08-473-932-1 32 69.6 547 2 US-08-70-0420A-1 32 69.6 547 3 US-08-714-017-1 32 69.6 547 4 US-09-134-001C-3500 31 67.4 223 4 US-09-134-01C-3500 31 67.4 223 4 US-09-14-13
544477 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
144444444444444444444444444444444444444
1 US-08-473-981A-6 1 US-08-433-010-1 1 US-08-483-889-1 2 US-08-483-389-1 2 US-08-483-389-1 2 US-08-483-932-1 2 US-08-473-503-1 2 US-08-474-087-6 2 US-08-720-420A-1 3 US-08-720-74-017-1 3 US-08-720-74-017-1 3 US-08-863-790-1 4 US-08-143-90-1 4 US-09-134-001C-3500 475-231425-6 4 US-09-134-133 1 US-08-149-103-3
US-08-473-981A-6 US-08-433-010-1 US-08-483-389-1 US-08-483-389-1 US-08-487-1139-1 US-08-487-1139-1 US-08-483-932-1 US-08-474-087-6 US-08-720-420A-1 US-08-720-420A-1 US-08-749-1 US-09-134-001c-3500 US-09-134-001c-3500

ALIGNMENTS

; MOLECULE TYPE: ; HYPOTHETICAL: US-08-797-842-11-Sequence 11, Applion Patent No. 5932706 Query Match Best Local APPLICATION NUMBER: US/08/797,84 FILING DATE: 10-Feb-1997 CLASSIFICATION: 530 PRIOR APPLICATION DATA: APPLICATION NUMBER: 08/381,891 FILING DATE: Feburary 8, 1995 ATTORNEY/AGENT INFORMATION: NAME: MICHAELSON, PETER L. GENERAL INFORMATION: APPLICANT: Merten TELEFAX: (908)530-6584 INFORMATION FOR SEQ ID NO: COMPUTER: IBM PC OPERATING SYSTEM: MS-DOS, Windows for Workgroups 3.11 SOFTWARE: Microsoft Word for Windows 6 CURRENT APPLICATION DATA: COMPUTER READABLE FORM: MEDIUM TYPE: 3 1/2" 1.44 MByte IBM compatible diskette CORRESPONDENCE ADDRESS: ADDRESSE: Michaelson and Wallace STREET: Parkway 109 Office Center, STREET: Road, P. O. Box 8489 CITY: Red Bank APPLICANT: Mertens, Koenraad et al APPLICANT: Mertens, Koenraad et al TITLE OF INVENTION: Antibodies specific for a haemostatic protein, TITLE OF INVENTION: their use for isolating intact protein, haemostatile of INVENTION: of proteolytic cleavage products of the protein NUMBER OF SEQUENCES: 16 REGISTRATION NUMBER: 30990 REFERENCE/DOCKET NUMBER: St. TELECOMMUNICATION INFORMATION: TELEPHONE: (908)530-6671 SEQUENCE CHARACTERISTICS: COUNTRY: TOPOLOGY: TYPE: amino acid STRANDEDNESS: unl STATE: LENGTH: Similarity 9; Conserv 07701 New Jersey Application US/08797842 40 amino acids USA Conservative unknown . peptide unknown 100.0%; S 100.0%; F tive 0; US/08/797,842 Stitching-5 Score 46; DB 2; Pred. No. 0.019; ; Mismatches 328 DB 2; Newman Springs 0, Length 40 Indels 0, haemostatic composi, Gaps 0

```
Ş
                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-797-842-12
                                                                                                                                                             US-08-944-483-48
                                                                                                                                                                             RESULT 3
                                                                                                                                                                                                                                                                                                                                                                           ; HYPQTHETICAL:
US-08-797-842-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 12, Approx.
                                                                                                                                          Sequence 48,
                                                                                                                          Patent No.
                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                      Query Match
Best Local :
                                                                                                        GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/08/797,84
FILING DATE: 10-Feb-1997
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/381,891
FILING DATE: Feburary 8, 1995
ATTORNEY/AGENT INFORMATION:
NAME: MICHAELSON, PETER L.
REGISTRATION NUMBER: 30090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: (908)530-6584 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
APPLICANT:
APPLICANT:
APPLICANT:
                                                    APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: ST
TELECOMMUNICATION INFORMATION:
TELEPHONE: (908)530-6671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Mertens, Koenraad et al TITLE OF INVENTION: Antibodies specific for a haemostatic protein, TITLE OF INVENTION: their use for isolating intact protein, haemos TITLE OF INVENTION: of proteolytic cleavage products of the protein their protein invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM: MEDIUM TYPE: 3 1/2" 1.44 MByte IBM compatible diskette
                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC
OPERATING SYSTEM: MS-DOS, Windows for Workgroups 3.11
SOFTWARE: Microsoft Word for Windows 6
                                                                                                                                                                                                                                12 LVDRATCLR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 40 amino acids
TYPE: amino acid
STRANDEDNESS: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ZIP: 07701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE: Michaelson and Wallace
STREET: Parkway 109 Office Center,
STREET: Road, P. O. Box 8489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23
                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                      Local Similarity es 9; Conserv
                                                                                                                                                                                                                                                                   1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LVDRATCLR 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LVDRATCLR
                                                                                                        INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Red Bank
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New Jersey
                                                                                                                                          Application US/08944483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Application US/08797842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (908)530-6584
                                                    FRIEDMAN, PAULA N.
                                                                                                                                                                                                                                                                                                      Conservative
KLASS, MICHAEL R. RUSSELL, JOHN C.
                                  GRANADOS,
                                                   FRIEDMAN,
                                                                                       COHEN, MAURICE
                                                                                                                                                                                                                                                                                                                                                                                                                            unknown
                                                                                                                                                                                                                                                                                                                                                                                                          peptide
                                                                                                                                                                                                                                                                                                                  100.0%; Score 46; DB 2; Length 40; 100.0%; Pred. No. 0.019;
                                  EDWARD N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/08/797,842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30090
R: Stitching-5
                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          328 Newman Springs
                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                haemostatic compositi
                                                                                                                                                                                                                                                                                                      0;
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                               US-08-073-531B-1
                                                                                                                                                                                                                                                                                             Sequence 1, Application US/08073531B Patent No. 5621039
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: UPPLICATION DATE:
CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
               COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS 6.0
SOFTWARE: WordParfect 6.1
CURRENT APPLICATION DATA:
                                                                            ZIP: 11788
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                           NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                            APPLICANT: Hallahan,
TITLE OF INVENTION: I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Becker, Cheryl L.
REGISTRATION NUMBER: 35,441
REFERENCE/DOCKET NUMBER: 61/
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847,935-1729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOCTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ZIP: 60064-3500
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION: NAME: Becker, Cheryl L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 7
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                              150 LVDRATCLR 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE: 847/55
TELEPHONE: 847/938-2623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: 100 Abbot
CITY: Abbott Park
                                                                                                                                              CITY: Hauppauge
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
APPLICATION NUMBER:
                                                                                                                                 COUNTRY:
                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                          1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            amino acid
                                                                                                                                                                             300 Rabro Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100 Abbott Park Road
                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STROUPE, STEVEN D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                 GALGANO & BURKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Abbott Laboratories
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         amino acids
                                                                               Diskette, 3.50 inch, 1.44 Mb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              No. 6232456e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           single
                                                                                                                                                                                                                                               Factor IX - Polymeric Conjugates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NOVEL SERINE PROTEASE REAGENTS
AND METHODS USEFUL FOR DETECTING AND TREATING DISEASES
OF THE PROSTATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; Score 46; DB 4
100.0%; Pred. No. 0.12;
                                                                                                                                                                                                                                                                et al
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/08/944,483
US/08/073,531B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6183.US.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 235;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

FILING DATE: June 8, CLASSIFICATION: 525
PRIOR APPLICATION DATA:

June 8, 1993

APPLICATION NUMBER: -

```
Sequence 2, ..., 639
Patent No. 5679639
Patent INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                     US-08-295-411-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; RELEVANT RESIDUES IN SEQ ID NO: US-08-073-531B-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                    APPLICANT: Griffin, APPLICANT: Mesters, TITLE OF INVENTION: TITLE OF INVENTION: TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE: (516) 582-6161
TELEFAX: (516) 582-6191
NFORMATION FOR SEQ ID NO: 1:
 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                               ADDRL.
STREET: JOI
TIY: LA JOI
TO CA
                                                                                                                                                                                                     NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PUBLICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: 12
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ANTI-SENSE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                   330 LVDRATCLR 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: Amino Acid
STRANDEDNESS: Sir
TOPOLOGY: Unknown
                                                                                           COUNTRY: USA
ZIP: 92037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ISSUE:
PAGES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CELL TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INDIVIDUAL ISOLATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER:
                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LIBRARY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VOLUME:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity 100.
9; Conservative
APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                    Application US/08295411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GALGANO & BURKE
                                                                                                                                                         E: Research Institute
10666 No. 5679639th To
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     415 Amino Acids
                                                                                                                                       Jolla
                                                                                                                                                                                                                                                                                     Mesters,
                                                                                                                                                                                                                                                                                     Griffin, John H. Mesters, Rolf M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unknown to applicant
                                                                                                                                                                                    Office of Patent Counsel, The Scripps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%;
                                                                                                                                                                                                                                 Serine Protease-Derived Polypeptides Anti-Peptide Antibodies, Systems and for Inhibiting Coagulation
                                                                                                                                                    5679639th Torrey Pines Road, TPC
                                                                                                                                                                                                                         10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30,735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      128-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 46; DB 1
Pred. No. 0.21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1: FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
                                                                                                                                                                                                                                                  Polypeptides and Systems and Therapeutic Methods
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 415;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TO 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                      US-08-955-471-2
                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-295-411-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                       Sequence 2, Applicati
Patent No. 5968751
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: 619-554-6312
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                        APPLICANT: Griffin, J
APPLICANT: Mesters, R
TITLE OF INVENTION: S
TITLE OF INVENTION: A
      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: protein HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: TS
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-554-2937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER: 1
FILING DATE: 18-NOV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HYPOTHETICAL:
ANTI-SENSE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: Region
LOCATION: 145..180
OTHER INFORMATION: ,
OTHER INFORMATION: ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                          330 EVDRATCLR 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY:
LOCATION:
                                                                                                             COUNTRY: UZIP: 92037
                                                                                                                                          STREET: 10666 | CITY: La Jolla STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
nes 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION: 1..145
OTHER INFORMATION:
                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION: 181..41: OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: Region LOCATION: 181..415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: Region LOCATION: 1..145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: 619-554-6312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Fitting, Thomas REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER:
APPLICATION NUMBER:
                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            l: 415 amino acids amino acid
                                                                                                                                                                                                                                                                                                                                                                         Application US/08955471
                                                                                                                                                                          E: Research
                                                                                                                            USA
                                                                                                                                                                                                                                                                                                       Griffin, John H.
Mesters, Rolf M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 46; DB 1 llarity 100.0%; Pred. No. 0.21; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                       Office of Patent Counsel, The Scripps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18-NOV-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22-AUG-1994
                                                                                                                                                                   ch Institute
5968751th Torrey Pines Road, TPC 8
                                                                                                                                                                                                                                                    Serine Protease-Derived Polypeptides and Anti-Peptide Antibodies, Systems and Therapeutic Methods for Inhibiting Coagulation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note* "Factor IX Heavy Chain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Peptide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note= "Factor IX Light Chain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US 07/793,989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/08/295,411
US/08/955,471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34,163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TSRI263.0C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Factor IX Activation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1; Length 415;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
```

ATTORNEY/AGENT INFORMATION:

CLASSIFICATION:

CLASSIFICATION:
RIOR APPLICATION DATA:
APPLICATION NUMBER:

08/295,411

```
US-08-766-288-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: 181..415
; OTHER INFORMATION: US-08-955-471-2
                                                                                                                                                                                                                                                                                                                                                                                              Patent No. 5969040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
APPLICATION NUMBER: US/08/766,28
FILING DATE: -
CLASSIFICATION: 525
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/073,531
FILING DATE: June 8, 1993
ATTORNEY_AGENT INFORMATION:
NAME: GALGANO & BURKE
                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 619-554-6312
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                          OPERATING SYSTEM: DOS 6.0 SOFTWARE: WordPerfect 6.1 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
                                                                                                                                                                                        COMPUTER READABLE FORM: MEDIUM TYPE: Diskette,
                                                                                                                                                                                                                                                                                                                                                APPLICANT: Hallaha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-554-2937
                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                   ADDRESSEE: GALGA:
STREET: 300 Rabri
CITY: Hauppauge
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           330 LVDRATCLR 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: Region
LOCATION: 146..180
OTHER INFORMATION: OTHER INFORMATION: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WOLECULE TYPE: PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NTI-SENSE:
                                                                                                                                                         OPERATING SYSTEM:
                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: Fitting, Thomas REGISTRATION NUMBER: 34 REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION:
                                                                                                                                                                                                                         11788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             H: 415 amino acids
amino acid
amino acid
OGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                             Application US/08766288
                                                                                                                                                                                                                                                                                    E: GALGANO & BURKE
300 Rabro Drive
                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                             Hallahan,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 46; DB 2; Length 415; llarity 100.0%; Pred. No. 0.21; Conservative 0; Mismatches 0; Indels.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Region
181..415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Region
1..145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ĕ
                                                                                                                                                                        IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein
                                                                                                                                                                                                                                                                                                                                             Eactor IX - Polymeric Conjugates
                                                                                                                                                                                                                                                                                                                                                               et al.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note= "Factor IX Heavy Chain'
                                                                                                           US/08/766,288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Peptide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note- "Factor IX Activation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= '"Factor IX Light Chain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             34,163
                                                                                                                                                                                       3.50 inch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TSR1263.0C1
                                                                                                                                                                                       1.44 Mb Storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
```

```
рЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; RELEVANT RESIDUES IN SEQ ID NO: US-08-766-288-1
                                                                                                                                                                                                                                                                                                                                                                                                                                    PCT-US92-10242-2
                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2, Application:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (516) 582-61 INFORMATION FOR SEQ ID NO:
                                                                                                                                                          COUNTRY: USA
ZIP: 92037
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
              PRIOR APPLICATION DATA:
APPLICATION NUMBER: US C
FILING DATE: 18-NOV-1991
                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Griffin, APPLICANT: Mesters,
ATTORNEY/AGENT INFORMATION:
                                                                                                   CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PUBLICATION INFORMATION: AUTHORS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 415 Amino Acids
                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ANTI-SENSE: -
ORIGINAL'SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RYPOTHETICAL:
                                                                                                              COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MMEDIATE SOURCE:
                                                        FILING DATE: 1
CLASSIFICATION:
                                                                                                                                                                                                                                           ADDRESSEE: Research Institute
STREET: 10666 North Torrey Pines Road, TPC B
                                                                                     APPLICATION NUMBER:
                                                                                                                                                                                                                                       STREET: 10666
CITY: La Jolla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLONE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
les 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAGES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CELL TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ISSUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INDIVIDUAL ISOLATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IBRARY:
                                                                                                                                                                                                                                                                                                                                                                                                                     Application PC/TUS9210242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Amino Acid
                                                                                                                                                                                                                          CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL:
                                                                                                                                                                                                                                                                                                                                                                                        Griffin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unknown to applicant
                                                                                                                                                                                                                                                                               Office of Patent Counsel, The Scripps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (516) 582-6161
                                                                      UMBER: PCT/US92/10242
19921118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           582-6191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
                                                                                                                                                                                                                                                                                                                                                                                      John H.
                                                                                                                                                                                                                                                                                                                      Serine Protease-Derived Polypeptides and Anti-Peptide Antibodies, Systems and Therapeutic Methods for Inhibiting Coagulation
                                                                                                                                                                                                                                                                                                                                                                          Rolf
                            us 07/793,989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      128-7 (DIV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 46; DB 2
Pred. No. 0.21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1:
                                                                                                                   Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 415;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

Ĺ

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; LOCATION: 181..41:
; OTHER INFORMATION:
PCT-US92-10242-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-742-877-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Application US/08742877 Patent No. 6046380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX: 619-554-6312
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
TELEFAX: (202) 371-2540 INFORMATION FOR SEQ ID NO: 2: SEQUENCE CHARACTERISTICS:
                                                                                                                                                 CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9408717.8
FILING DATE: 03-MAY-1994
                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: CLARK, AR TITLE OF INVENTION: NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER: 34,163
REFERENCE/DOCKET NUMBER: SCI
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-554-2937
                                                     TELECOMMUNICATION INFORMATION: TELEPHONE: (202) 371-2600
                                                                                      FILING DATE: 03 MAY-1994
AATTORNEY AGENT INFORMATION:
NAME: FLESHNER, RAZ E.
REGISTRATION NUMBER: 34,
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                            SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/742,877 FILING DATE: 01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: Region
LOCATION: 146..180
OTHER INFORMATION: OTHER INFORMATION: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               330 LVDRATCLR 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NTI-SENSE:
                                                                                                                                                                                                                                                                                                                                                                                                                    STEERNE, KESSLER, GOLDSTEIN & FOX, P.L.L.C. STREET: 1100 NEW YORK AVENUE, NW, SUITE 600 CITY: WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                      COUNTRY: USA
ZIP: 20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
les 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION: 1..145
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: Region LOCATION: 1..145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLARK, Anthony J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; llarity 100.0%; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Region
181..415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA SEQUENCES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Peptide"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note= "Factor IX Heavy Chain'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note= "Factor IX Activation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note= "Factor IX Light Chain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34,163
ER: SCR0472P
                                                                                                        34,331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                         0623.0470001/REF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 46; DB 5
Pred. No. 0.21;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 5; Length 415;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
```

```
망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-742-877-2
                                                                                                                                                                                                                                                                                                                                                                      5521070~2
;Patent No. 5521070
                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; TYPE: PRT; ORGANISM: Homo Sapien US-09-053-871A-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 10
US-09-053-871A-21
                                                                                                                5521070-2
                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 11
                                                                                                                                                                                                                                                                                      Patent No. 3321070

APPLICANT: MEULIEN, PIERRE
TITLE OF INVENTION: DNA SEQUENCE CODING FOR HUMAN FACTOR
TITLE OF INVENTION: DNA SEQUENCE CODING FOR HUMAN FACTOR
IX OR A SIMILAR PROTEIN, EXPRESSION VECTOR, TRANSFORMED CELLS,
IX OR A SIMILAR PROTEIN, EXPRESSION VECTOR, TRANSFORMED CELLS,
IX OR A SIMILAR PROTEIN, EXPRESSION VECTOR TO STAINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: Pa
SEQ ID NO 21
LENGTH: 461
                                                                                                                                              SEQ ID NO:2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 21, Application US/09053871A Patent No. 6315995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                Best Local Similarity Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILE REFERENCE: 51917-B
CURRENT APPLICATION NUMBER: US/09/053,871A .
CURRENT FILING DATE: 1998-04-01
NUMBER OF SEQ 1D NOS: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Solomon, Robert A.
APPLICANT: Schmidt, Ann Marie
TITLE OF INVENTION: METHODS FOR TREATING AN ISCHEMIC DISORDER AND IMPROVING
TITLE OF INVENTION: STROKE OUTCOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: 970,966
FILING DATE: 03-NOV-1992
APPLICATION NUMBER: 433,276
                                                                                                                                                                                                                                          CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/
FILING DATE: 14-MAR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             376 LVDRATCLR 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                       376 LVDRATCLR 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity 100 nes 9; Conservative
                                                                                                                             LENGTH: 461
                                                                                                                                                             FILING DATE: 08-NOV-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 LVDRATCLR 9
1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pinsky, David
Stern, David
Rose, Eric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          461 amino acids
                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             David J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%;
                                                              100.0%; Score 46; DB 6; Length 461; 100.0%; Pred. No. 0.23;
                                                                                                                                                                                                                                                           US/08/209,489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0:
                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 46; DB 3
Pred. No. 0.23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 46; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>ښ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 461;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                              0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

밁

376 LVDRATCLR

```
RESULT 13
5223425-5
;PATENT, O. 5223425
; PATENT, D. 5223425
; APPLICANT: FILER, JEFFREY S.;SPIEGELMAN, BRUCE M.;ROSEN,
;BARRY M.;WHITE, TYLER R.
;BARRY M.;WHITE, TYLER R.
;TITLE OF INVENTION: DNA ENCODING HUMAN ADIPSIN WITH COMPLEMENT
                                                                                                                                                           멍
                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                        ; MOLECULE TYPE:
US-08-944-483-44
                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: Becker, Cheryl L.
REGISTRATION NUMBER: 35,441
REFERENCE/DOCKET NUMBER: 618:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 847/935-1729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tent No.
NUMBER OF SEQUENCES: 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 424 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: FastSEQ for Windows Version 2.0 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/944,483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM: MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                         148 VLDRATCNR 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM CON
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                  LENGTH: 228 amino acids TYPE: amino acid STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY: USA
ZIP: 60064-3500
                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: 847/938-2623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER:
                                                                                                                                                                             1 LVDRATCLR 9
                                                                                                                                                                                                                         Similarity
6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Abbott Park
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6232456 US/08944483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GRANADOS, EDWARD N.
KLASS, MICHAEL R.
RUSSELL, JOHN C.
STEWART, KENT D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3: Abbott Laboratories 100 Abbott Park Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STROUPE, STEVEN D.
VENTION: NOVEL SERINE PROTEASE REAGENTS
                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FRIEDMAN, PAULA N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COLPITTS, TRAC
                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IBM Compatible
                                                                                                                                                                                                                                                                                                     No. 6232456e
                                                                                                                                                                                                                                        71.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AND METHODS USEFUL FOR DETECTING AND TREATING DISEASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OF THE PROSTATE
76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRACEY L.
                                                                                                                                                                                                                         2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6183.US.01
                                                                                                                                                                                                                                                   Score 33;
                                                                                                                                                                                                                                         Pred.
                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                        No.
                                                                                                                                                                                                                                                       DВ
                                                                                                                                                                                                                                                     4; Length 228;
                                                                                                                                                                                                                       0
```

₽

173 VLDRATCNR 181

```
NUMBER OF SEQUENCES: 19
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/277,963
FILING DATE: 30-NOV-1988
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 34,203
FILING DATE: 02-APR-1987
SEQ ID NO:8:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 14
5223425-4
                                                                                       5223425-8
                                                                                                                                                                                                                                                                                               5223425-8
;Patent No. 5223425
                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5223425-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5223425-4
                                                                                                                                                                                                                                        ; TITLE OF INVENTION: DNA ENCODING HUMAN ADIPSIN WITH COMPLEMENT;D ACTIVITY
                                                                                                                                                                                                                                                                  ; APPLICANT: FLIER, JEFFREY S.;SPIEGELMAN, BRUCE M.;ROSEN, ;BARRY M.;WHITE, TYLER R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; SEQ ID NO:5:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;Patent No. 5223425
; APPLICANT: FLIER,
;BARRY M.;WHITE, TYLER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            D ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO:4:
                             Query Match .
Best Local Similarity
Matches 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES: 19
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/277,963
ETILING DATE: 30-NOV-1988
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 34,203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/(
FILING DATE: 30-NOV-1988
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 34,2(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Y M.; WHITE, TYLER R. TITLE OF INVENTION: DNA ENCODING HUMAN ADIPSIN WITH COMPLEMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                         170 VLDRATCNR 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             158
                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity 66. hes 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity 66. hes 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 02-APR-1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: 34,203
FILING DATE: 02-APR-1987
                                                                                                     LENGTH: 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 250
                                                                                                                                                                                                                                                                                                                                                                                                     1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 238
1 LVDRATCLR 9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VLDRATCNR 166
                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JEFFREY S.; SPIEGELMAN, BRUCE M.; ROSEN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                71.7%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               71.78;
66.78;
                                           71.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/07/277,963
                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 33;
Pred. No.
                                         Score 33;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 33; Pred. No. :
                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                      рв
40;
                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . DB
                                                          6
                                                                                                                                                                                                                                                                                                                                                                                                                                                               6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>ب</u>
                                                     Length 253;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 250;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 238
                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

Search completed: May 6, 2003, 15:04:05
Job time: 16.4 secs

This page blank (189710)

GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                    Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-851-422B-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           мау
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         328255 seqs, 86286685 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                 Published_Applications_AA:*
|: /cgn2_6/ptodata/1/pubpaa/US08_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6,
                                                                                                                                                                                                         /Ggn2_6/ptodata/1/pubpaa/PCT_NEW_PUB.pep:*
/Cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep:*
/Cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep:*
/Cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.pep:*
                                                                                                              /cgn2_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US09_NEW_PUB.pep:*
                                                                                                                                                                                        cgn2_6/ptodata/1/pubpaa/US07
/cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep:*
                   /cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep:*
                                                                  /cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.pep:*
/cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2003, 15:01:10 ; Search time 18 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (without alignments)
43.143 Million cell updates/sec
                                                                                                                                                                                   _NEW_PUB.pep:*
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result	Score	Query Match	Query Match Length DB	וכ	ID	Description
2	46	100.0	461	9	US-10-132-829-5	Sequence 5, Appli
ω	46	100.0	461	10	US-09-884-901-3	Sequence 3, Appli
4	41	89.1	415	10	US-09-118-748-2	Sequence 2,
s	ω ω	71.7	101	9	US-10-012-542-351	Sequence 351,
σ	ω ω	71.7	228	10	US-09-821-255-2	Sequence 2, Appli
7	32	69.6	44	12	US-10-001-843-188	Sequence 188, App
œ	32	69.6	83	10	US-09-864-761-35244	Sequence 35244, A
9	32	69.6	252	ø	US-10-117-323-38	Sequence 38, Appl
10	32	69.6	434	10	US-09-753-436-120	Sequence 120, App
11	32	69.6	547	9	US-10-047-542-65	Sequence 65, Appl
12	32	69.6	547	10	US-09-753-436-1	Sequence 1,
13	32	69.6	2125	10	US-09-919-172-29	Sequence 29, Appl
14	31	67.4	24	9	US-10-012-542-362	Sequence 36
15	31	67.4	223	10	US-09-870-162A-13	Sequence 13,
16	31	67.4	338	10	US-09-886-055-205	Sequence 2
17	31	67.4	382	10	US-09-731-872-312	Sequence 312
18	31	67.4	429	9	US-10-012-542-366	Sequence 366,
19	31	67.4	466	7	116-00-731-073-311	600000000000000000000000000000000000000

45	44	43	42	41	40	39	38	37	36	35	34	E E	32	31	30	29	28	27	26	25	24	23	22	21	0.2
28	28	28	28	28	28	28	29	29	29	29	29	29	29	29	29	29	29	29	30	30	30	30	30	31	31
60.9	60.9	60.9	60.9	60.9	60.9	60.9	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	65.2	65.2	65.2	65.2	65.2	67.4	6/.4
119	77	75	70	57	36	10	909	909	460	460	460	459	326	300	282	193	80	80	736	374	363	215	10	873	4/0
9	9	9	12	10	9	9	12	9	ø	9	9	9	9	9	9	10	10	9	9	9	9	10	9	9	œ
US-10-141-965-2	US-09-792-793A-14	US-10-104-755-12	US-10-107-371-1	US-09-864-761-36792	US-10-083-357-1143	US-09-572-404B-1749	US-10-078-929-168	us-10-078-770-190	US-09-759-595-1	US-10-001-254-28	US-10-001-254-16	US-09-759-595-3	US-10-108-915-46	US-10-224-414-2	US-10-167-555-2	US-09-864-761-34304	US-09-764-847-626	US-10-092-154-626	US-10-045-815-4	US-10-255-817-10	US-10-045-815-2	US-09-925-297-660	US-09-572-404B-1740	US-10-167-264-2	US-10-012-542-365
2, ,	•	Sequence 12, Appl	Sequence 1, Appli	Sequence 36792, A	Sequence 1143, Ap	Sequence 1749, Ap	Sequence 168, App	Sequence 190, App	Sequence 1, Appli	Sequence 28, Appl	Sequence 16, Appl	Sequence 3, Appli	46	Sequence 2, Appli	Sequence 2, Appli	Sequence 34304, A	Sequence 626, App	Sequence 626, App	Sequence 4, Appli	Sequence 10, Appl	Sequence 2, Appli	Sequence 660, App	Sequence 1740, Ap	Sequence 2, Appli	Sequence 365, App

ALIGNMENTS

RESULT 1 US-09-864-761-46600

Sequence 46600, App. Patent No. US2002000 GENERAL INFORMATION

6600, Application US/09864761 US20020048763A1

APPLICANT: Penn, Sharron G.
APPLICANT: Rank, David R.
APPLICANT: Hanzel, David K.
APPLICANT: Chen, Wensheng PRIOR APPLICATION NUMBER: PCT/US01/00668
PRIOR FILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: PCT/US01/00663
PRIOR FILING DATE: 2001-01-30 PRIOR PRIOR FILING DATE: 2000-10-04
PRIOR APPLICATION NUMBER: US 60/236,359
PRIOR FILING DATE: 2000-09-27 PRIOR APPLICATION NUMBER: US 09/632,366 PRIOR FILING DATE: 2000-08-03 PRIOR APPLICATION NUMBER: US 60/180,312
PRIOR FILING DATE: 2000-02-04
PRIOR APPLICATION NUMBER: US 60/207,456
PRIOR FILING DATE: 2000-05-26 CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT FILING DATE: 2001-05-23 TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL FO TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY FILE REFERENCE: Acomica-X-1 PRIOR APPLICATION NUMBER: GB 24263.6 FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00665
FILING DATE: 2001-01-30 APPLICATION NUMBER: PCT/US01/00664 FILING DATE: 2001-01-30 APPLICATION NUMBER: PCT/US01/00669 FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00667
FILING DATE: 2001-01-30 FILING DATE: 2000-09-27
APPLICATION NUMBER: PCT/US01/00666 APPLICATION NUMBER: PCT/US01/00661 FILING DATE: 2001-01-30 APPLICATION NUMBER: PCT/US01/00662 2001-01-30

```
OTHER INFORMATION: EXPRESSED IN ADULT LIVER, SIGNAL = 3.5;
OTHER INFORMATION: EXPRESSED IN FETAL LIVER, SIGNAL = 2.5;
OTHER INFORMATION: EST_HUMAN HIT: T28608.1, EVALUE 3.00e-36;
OTHER INFORMATION: SWISSPROT HIT: P00740, EVALUE 1.00e-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Thes 9; Conserv
                                                                                                                                                                                                                                                                                                                                US-09-884-901-3
                                                                                                                                                                                                                                                                                                                                                                 RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; ORGANISM: Homo sapiens
US-10-132-829-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: PCT/US01/00670
PRIOR FILING DATE: 2001-01-30
PRIOR APPLICATION NUMBER: US 60/234,687
PRIOR FILING DATE: 2000-09-21
PRIOR APPLICATION NUMBER: US 09/608,408
PRIOR FILING DATE: 2000-06-30
PRIOR APPLICATION NUMBER: US 09/774,203
PRIOR APPLICATION NUMBER: US 09/774,203
PRIOR FILING DATE: 2001-01-29
Sequence 3, Application US/09884901
Patent No. US20020076798A1
GENERAL INFORMATION:
APPLICANT: Miso, Carol
APPLICANT: Kay, Mark
TITLE OF INVENTION: Liver-Specific Gene Expression
FILE REFERENCE: UOFW-1-17396
CURRENT APPLICATION NUMBER: US/09/884,901
CURRENT FILING DATE: 2001-06-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 100.
Thes 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 5, Application US/10132829
Publication No. US20030044982A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: PatentIn version 3.1 SEQ ID NO 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Annomax Sequence Listing Engine SEQ ID NO 46600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Chien, Kenneth R
APPLICANT: Hoshijims, Masahiko
TITLE OF INVENTION: Method to treat hemophilia by hepatic gene transfer of Factor VII
TITLE OF INVENTION: With vesicle vector
TITLE OF INVENTION: WITH VESICLE VESICLE
TITLE OF INVENTION: WITH VESICLE
TITLE OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQ ID NOS: 49117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: MAP TO AL033403.1
OTHER INFORMATION: EXPRESSED IN ADUL
OTHER INFORMATION: EXPRESSED IN FETA
OTHER INFORMATION: EST_HUMAN HIT: T2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        376 LVDRATCLR 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96 LVDRATCLR 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCT/US01/00670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 46; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 46; DB 10
Pred. No. 0.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             vers. 1.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 461;
                                                                                                              Cassettes,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                              Methods of Use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
```

```
ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-118-748-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-884-901-3
                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 5
US-10-012-542-351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 4
US-09-118-748-2
                                                                                                                                                                                                                                                                                                                                            Publication No. US20 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Stafford, Darrel W.
APPLICANT: Chang, Jinli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application US/09118748A Patent No. US20020031799A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best
                                   PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-16
PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-16
PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-16
PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-16
PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: Factor Ix Antihemophilic Factor with Increased Clotting TITLE OF INVENTION: Activity FILE REFERENCE: 5470-183
PRIOR
PRIOR
PRIOR
PRIOR
                                                                                                                                                                                                    CURRENT APPLICATION NUMBER: US/10/012,542
CURRENT FILING DATE: 2001-12-12
PRIOR APPLICATION NUMBER: 09/461,325
PRIOR FILING DATE: EARLIER FILING DATE: 1999-12-14
                                                                                                                                                                                                                                                                                                    APPLICANT: Ruben et al. TITLE OF INVENTION: 94 Human Secreted Proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EARLIER APPLICATION NUMBER: 60/053,571 EARLIER FILING DATE: 1997-07-21 NUMBER OF SEQ ID NOS: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/09/118,748A CURRENT FILING DATE: 1998-07-17
                                                                                                                                                                                                                                                                                   FILE REFERENCE: PZ029P1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: US 60/212,902
PRIOR FILING DATE: 2000-06-20
NUMBER OF SEQ ID NOS: 18
                                                                                                                                                              PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 461
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: HomoSapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       330 LVDRATCL 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     376 LVDRATCLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
les 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 LVDRATCL 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 LVDRATCLR 9
                      APPLICATION NUMBER: EARLIER
                                                                                                                                                                                                                                                                                                                                                                Application US/10012542 o. US20030044851A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ver. 2.0
    EARLIER FILING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        89.1%; Score 41; DB 1 100.0%; Pred. No. 3.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
APPLICATION NUMBER: 60/090,112
DATE: 1998-06-22
                                                                                                                                                                                 APPLICATION NUMBER: 60/089,507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0.46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 415;
                                                                                                      60/089,509
                                                                                                                                         60/089,508
                                                              60/089,510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>.</u>.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.
```

```
; SEQ ID NO 2
; LENGTH: 228
; TYPE: PRT
; ORGANISM: human
US-09-821-255-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Thes 6; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
""" hes 6; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; LENGTH: 101
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-012-542-351
                                                                                                                                                                                                                                                                                                                                            US-10-001-843-188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-821-255-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
PRIOR FILING DATE: 2000-11-20
NUMBER OF SEQ ID NOS: 218
SOFTWARE: PatentIn version 3.1
SEQ ID NO 188
LENGTH: 44
                                                                                                                                                                                                                                                       GENERAL INFORMATION:
APPLICANT: Salceda,
APPLICANT: Macina,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2, Application US/09821255 Patent No. US20020081293A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 35:
                                                                               APPLICANT: Turner, Leah
TITLE OF INVENTION: Compositions and Methods
FILE REFERENCE: DEX-0267
CURRENT APPLICATION NUMBER: US/10/001,843
CURRENT FILING DATE: 2001-11-20
PRIOR APPLICATION NUMBER: 60/249,992
                                                                                                                                                                                                                                                                                                             Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-22 NUMBER OF SEQ ID NOS: 532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT FILING DATE: 2001-03-29 PRIOR APPLICATION NUMBER: 60/075,328 PRIOR FILING DATE: 1998-02-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: Inhibitors of Complement Activation FILE REFERENCE: 98-2A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Michael S.C. Fung
APPLICANT: Bill N.C. Sun
APPLICANT: Cecily R.Y. Sun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/09/821,255
CURRENT FILING DATE: 2001-03-29
                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: 09/253,689
PRIOR FILING DATE: 1999-02-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                              148 VLDRATCNR 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   33 DRATCL 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3 DRATCL 8
                                                                                                                                                                                                                                                                                                                                                                                                                                              1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                         188, Application US/10001843
b. US20020132255A1
                                                                                                                                                                                      Sun, Yongming
Liu, Chenghua
                                                                                                                                                                                                                    Cafferkey, Robert
                                                                                                                                                                                                                                         Recipon, Herve
                                                                                                                                                                                                                                                         Macina, Roberto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                71.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               71.7%; Score 33; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 33; DB
Pred. No. 69;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9;
                                                                                                                                                   Relating to Breast Specific Genes and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 228;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
```

```
RESULT 8
US-09-864-761-35244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-001-843-188
                                                                                                                                          SOFTWARE: Annomax
SEQ ID NO 35244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 35244, Application US/09864761 Patent No. US20020048763A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Chen, Wensheng
TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC
TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICHOADBAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR API
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILE REFERENCE: Aeomica-X-1
CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT FILING DATE: 2001-05-23
                                                                                                                                                                                    PRIOR FILING DATE: 2001-01-29 NUMBER OF SEQ ID NOS: 49117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: US 09/632,366
PRIOR FILING DATE: 2000-08-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                     LENGTH: 8
TYPE: PRT
                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: US 09/608,408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: PCT/US01/00665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: PCT/US01/00666
PRIOR FILING DATE: 2001-01-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: GB | PRIOR FILING DATE: 2000-10-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR FILING DATE: 2000-02-04
PRIOR APPLICATION NUMBER: US 60/207,456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: US 60/180,312
                                                                                                                                                                                                                                                                                                                                PRIOR FILING DATE:
                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: PCT/US01/00670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: PCT/US01/00664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT
OTHER INFORMATION: MAP TO AL033378.6
OTHER INFORMATION: EXPRESSED IN BONE MARROW, SIGNAL
OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL - 2.3
                                                                        ORGANISM: Homo sapiens
                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
nes 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ||:|| ||
7 LVERAVCL 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 LVDRATCL
                                                                                                                                                                                                                        FILING DATE: 2000-06-30 APPLICATION NUMBER: US 09/774,203
                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US 60/234,687 FILING DATE: 2000-09-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: PCT/US01/00669 FILING DATE: 2001-01-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US 60/236,359 FILING DATE: 2000-09-27
                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: PCT/US01/00661 FILING DATE: 2001-01-30
                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00662
FILING DATE: 2001-01-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: PCT/US01/00663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: PCT/US01/00668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: PCT/US01/00667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Penn, Sharron G
Rank, David R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hanzel,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                               Sequence Listing Engine vers.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2001-01-30
                                                                                                                                                                                                                                                                                                                              2001-01-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          David K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001-01-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001-01-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               69.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>۾</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GB 24263.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 32;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROBES USEFUL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
; LENGTH: 252
; TYPE: PRT
; ORGANISM: Mouse
US-10-117-323-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
"-"ches 6; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 10
US-09-753-436-120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-864-761-35244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: US 60/281,724
PRIOR FILING DATE: 2001-04-06
PRIOR PPLICATION NUMBER: US 60/294,736
PRIOR FILING DATE: 2001-05-30
PRIOR APPLICATION NUMBER: US 60/350,962
PRIOR FILING DATE: 2002-01-25
NUMBER OF SEO ID NOS: 41
SOFTMARE: PastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-117-323-38
                                                                                                                                                                                                                                                                                                                                         Sequence 120, Application US/09753436 Patent No. US20010029293A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ouery Match
Best Local Similarity
Matches 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 38, Application US/10117323 Publication No. US20030054993A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Rancourt, Susan L.
APPLICANT: O'SULLIVAN, Colleen M.
TITLE OF INVENTION: Implantation Serine Proteinases
FILE REFERENCE: 033337-005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/10/117,323
CURRENT FILING DATE: 2002-04-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Rancourt, Derrick E. APPLICANT: Rancourt, Susan L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION:
OTHER INFORMATION:
COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                             NUMBER OF SEQUENCES: 17
                                                                                                                                                                                                                                                                                     APPLICANT: Gallatin, W. Mic APPLICANT: Vazeux, Rosemay
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ID NO 38
ENGTH: 252
                                                                                                                                                                                                                                                                    TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      164 VVDHATCSR 172
                                           COUNTRY: United States of America
ZIP: 60606-6402
                                                                                                     CITY: Chicago
STATE: Illinois
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10 VGRSTCLR 17
                                                                                                                                                         STREET:
                                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 VDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R INFORMATION:
R INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION:
                                                                                                                                                         E: Marshall, O'Toole, 6300 Sears Tower, 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NN: EXPRESSED IN FETAL LIVER, SIGNAL = 1.4

NN: EXPRESSED IN ADULT LIVER, SIGNAL = 2.1

NN: EXPRESSED IN HEACHTA, SIGNAL = 2.1

NN: EXPRESSED IN HELA, SIGNAL = 1.2

NN: EXPRESSED IN HELA, SIGNAL = 1.1

NN: EXPRESSED IN BRAIN, SIGNAL = 1.5

                                                                                                                                                                                                                                                                ICAM-Related Materials and Methods
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               69.6%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     69.6%;
75.0%;
                                                                                                                                                                                                                                                                                                                        W. Michael
                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 32; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 32; DB Pred. No. 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                         Gerstein, Murray & Borun
South Wacker Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 9; Length 252;
1.2e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
망
                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                   RESULT 11
US-10-047-542-65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-753-436-120
                                                                                                                                                                                                                             Sequence 65, Application US/10047542 Patent No. US20020168367A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                     TITLE OF INVENTION: NOVEL IMMUNOADHESINS FOR TREATING AND PREVENTING VIRAL TITLE OF INVENTION: AND BACTERIAL DISEASES FILE REPERENCE: 030905.0004.CIP1 CURRENT APPLICATION NUMBER: US/10/047,542 CURRENT FILING DATE: 2001-10-26 PRIOR APPLICATION NUMBER: PCT/US01/13932
                                                                                                                                                                                          APPLICANT: LARRICK, APPLICANT: WYCOFF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: (312) 474-044
TELEX: 25-3856
INFORMATION FOR SEQ ID NO:
PRIOR FILING DATE: 2001-04-28
PRIOR APPLICATION NUMBER: 60/200,298
PRIOR FILING DATE: 2000-04-28
NUMBER OF SEQ ID NOS: 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US 07/889,724 FILING DATE: 26-MAY-1992 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 27-JAN-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: (
FILING DATE: 05-JUN-
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 05-AUG-
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                  292 IDRATC 297
                                                                                                                                                                                                                                                                                                                                                                                                      2 VDRATC 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 05-AUG-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
nes 5; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US 08/487,113 FILING DATE: 07-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REGISTRATION NUMBER: 38,659
REFERENCE/DOCKET NUMBER: 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Williams, Joseph A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US 07/827,689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/09/753,436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          434 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (312) 474-0448
                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (312) 474-6300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                UMBER: US 08/009,266
22-JAN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-มบพ-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   05-AUG-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-JAN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            single
                                                                                                                                                                                          JAMES W.
KEITH L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             69.6%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US 08/286,754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US 08/102,852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US 07/894,061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09/382,289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  33282
                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 32; DB 10; Length 434; Pred. No. 2.1e+02; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Jr.
                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

```
; LENGTH: 547
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-047-542-65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Thehes 5; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-753-436-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application US/09753436 Patent No. US20010029293A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US 01 FILING DATE: 05-AUG-1993 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: Patentin Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Gallatin, W. Mi
APPLICANT: Vazeux, Rosemay
TITLE OF INVENTION: ICAM-R
NUMBER OF SEQUENCES: 120
                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: UFILING DATE: 07-JUN-1PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 08/009,266
ETLING DATE: 22-JAN-1993
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
                                                                                                                                                                               FILING DATE: 26-MAY-1992 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
                                                            TELECOMMUNICATION INFORMATION:
                                                                                                                                 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        402 IDRATC 407
                                                                                                                                                                                                 APPLICATION NUMBER: FILING DATE: 26-MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: FILING DATE:
                                                                                                NAME: Williams, Jos
REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OPERATING SYSTEM:
                                                                                                                                                APPLICATION NUMBER: US 07/827,689 FILING DATE: 27-JAN-1992
                                                                                                                                                                                                                                                               APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US 08/286,754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                            TELEPHONE:
                                                                                 REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 VDRATC 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60606-6402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chicago
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Illinois
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E: Marshall, O'Toole, 6300 Sears Tower, 233
                               :: (312) 474-6300
(312) 474-0448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gallatin, W. Michael
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PatentIn Release #1.0, Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                  05-AUG-1994
                                                                                                                                                                                                                                                 05-JUN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                             JMBER: US 08/487,113
07-JUN-1995
ID NO:
                                                                                                            Joseph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ICAM-Related Materials and Methods: 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     69.6%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                               US 08/102,852
                                                                                                                                                                                                             US 07/889,724
                                                                                                                                                                                                                                                                 US 07/894,061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/09/753,436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09/382,289
                                                                                             38,659
                                                                                 33282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 32; I
Pred. No. 2
                                                                                                              Jr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gerstein, Murray & Borun
South Wacker Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .6e+02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
SOFTWARE: PERL Program
SEQ ID NO 29
LENGTH: 2125
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-919-172-29; Sequence 29, Application US/09919172; Patent No. US20020119463A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; NAME/KEY: misc_feature
; OTHER INFORMATION: Incyte ID No. US20020119463A1 3774181CD1
US-09-919-172-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
""" hes 5; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-753-436-1
                                                                                                                                                                                                                                                                                                                                                                                      US-10-012-542-362
                                                                                                                                                                                                                                                                                                                       Sequence 362, Applic Publication No. US20 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION
              CURRENT APPLICATION NUMBER: US/10/012,542

CURRENT FILING DATE: 2001-12-12

PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 09/461,325

PRIOR FILING DATE: EARLIER FILING DATE: 1999-12-14

PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 60/089,507

PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-16

PRIOR FILING DATE: EARLIER APPLICATION NUMBER: 60/089,508

PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-16

PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 60/089,508

PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 60/089,509

PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-16

PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-16

PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/09/919,172
CURRENT FILING DATE: 2001-07-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Faris,*Mary
APPLICANT: Turner, Christopher M.
TITLE OF INVENTION: PROSTATE CANCER MARKERS
FILE REFERENCE: PA-0036 US
                                                                                                                                                                                                                                                                FILE REFERENCE: PZ029P1
                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: 94 Human Secreted Proteins
                                                                                                                                                                                                                                                                                                    APPLICANT: Ruben et al
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER: 60/222,469 PRIOR FILING DATE: 2000-07-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQ ID NOS: 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1946 LVDRITALR 1954.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    402 IDRATC 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 LVDRATCLR 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 VDRATC 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                              Application US/10012542
o. US20030044851A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           547 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein
30..547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000-07-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69.6%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      69.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 32;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 32;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
APPLICATION NUMBER: 60/090,112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1e+03;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 2125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 547;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
APPLICANT: Breinig, Sabine
APPLICANT: Breinig, Secry
TITLE OF INVENTION: Phenol Induced Proteins of Thauera aromatica
FILE REFERENCE: BC1006 US DIV
CURRENT APPLICATION NUMBER: US/99/870,162A
CURRENT APPLICATION NUMBER: U9/516914
PRIOR APPLICATION NUMBER: 09/516914
PRIOR FILING DATE: 2000-03-01
NUMBER OF SEQ ID NOS: 44
SOFTWARE: Microsoft Office 97
SEQ ID NO 13
LENGTH: 223
TYPE: PRT
ORGANISM: Thauera aromatica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-22
PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 60/090,113
PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-22
NUMBER OF SEQ ID NOS: 532
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 362
LENGTH: 24
TYPE: PRT
ORGANISM: Homo sapiens
US-10-012-542-362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                망
                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 15
US-09-870-162A-13
Search completed: May 6, 2003, 15:04:52 Job time: 19.3333 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 13, Application US/09870162A Patent No. US20020042118A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 67.4%; Score 31; DB 9; Length 24; Best Local Similarity 75.0%; Pred. No. 17; Matches 6; Conservative 1; Mismatches 1; Indels
                                                                                                                                                            Query Match 67.4
Best Local Similarity 66.7
Matches 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 LVDRATCL 8
| |||:||
12 LQDRASCL 19
                                                                           1 LVDRATCLR 9
|: || |||
46 LITRAGCLR 54
                                                                                                                                                                                 67.48;
                                                                                                                                                            Score 31; DB 10; Length 223; Pred. No. 1.6e+02; 1; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0:
                                                                                                                                                                  0
```

ع ح

(

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein -
       9
10
11
11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
                                                                                                                        48
47.5
47.5
47
                                                                                                                                                                                                                                                              48.5
                                                    46.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq
                                                                                                                                                                                                                                                                                                126
76
54
50
50
50
50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           мау
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR_73:*
1: pir1:*
2: pir2:*
3: pir3:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum Match 0%
Maximum Match 100%
Listing first 45 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               283224 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-851-422A-8
128
       GFIATLCTKVLDFGIDKLIQLIEDKXX 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2003, 16:12:15; Search time 16.9412 Seconds (without alignments)
153.214 Million cell updates/sec
   425
481
1218
1274
885
131
131
183
290
317
984
859
131
131
131
                                                                                                                                                                                                                                                                416
421
835
396
520
520
56
213
499
309
507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96134422 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gapext 0.5
 A40096

A40096

S67196

A39939

A39938

A99938

A99938

T02635

T02635

T02635

T02635

T04521

D64521

D64521

D745985

                                                                                                                                                                                                                                                                                                                                                                                $49145
$49145
$75321
$75032
$75321
$705032
$705033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S25283
                                                                                                                                                                                                                                                                                                                                                                     AF2370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                   .96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              283224
              conserved hypothet hypothetical prote hypothetical prote hypothetical prote ATP-dependent RNA hypothetical prote hypothetical prote hypothetical prote
                                                                                                                                                  F22M8.8
                                                                                                                                                                                                                                                                                                                                                                                                                                               amoebapore A amoebapore C I
                                                                                                                                                                                           hypothetical
D1 protein ho
                                                                                                                                                                                                    proton/sodium-glut
hypothetical prote
hypothetical prote
                                                                                                                                                                                                                                                            probable membrane
protein-tyrosine k
DNA primase - Heli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
O-sialoglycoprotei
                                                                                                                                                                                                                                                                                                                                               serine/threonine
protein-tyrosine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       amoebapore
                                                                                                                                         hypothetical prote
                                                                                                                                                                                                                                                                                                               protein-tyrosine k
                                                                                                                                                                                                                                                                                                                                 conserved hypothet
                                                                                                                                                                                                                                                                                                                                                                                   probable iron-sulf
                                                                                                                                                                                                                                                                                                                                                                                                    gene 51 protein
                                                                                                                                                                                                                                                                                                                                                                                                                  protein kinase hom
                                                                                                                                                                                                                                                                                                                                                                                                                                      serine/threonine·s
                                                                                                                                                                                         protein homolog
                                                                                                                                                         protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                    precu
                                                                                                                                                             неli
in -
```

) >		n	3		1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
ນ ພ ນ 11 C	4 4 4 0 0 0	2 W W	828 828		S51380 T00534	protein kinase STE S-receptor kinase
· ω ι ω κ	46	. N. D	1098	ν -	T41493	hypothetical prote
س بر 4- اس	4 4 5 5 5 5		1484 1484	s N	S73597	lactococcin transp
36	44.	5	384	N	D97256	probable UDP-glucu
38			4 4 4 5 5	N N	C70076 R65072	hypothetical prote probable transport
39			. 4 2 8 5	N N	C91098	
4 4 C	4 4 U U		50 X 50 X	N	G85943 T37206	probable transport protein-tyrosine k
. 4.2		.51	552	Š	C87259	NA synthe
4- 4- 4- (J		5.	გნ.7 5.7	y N	T48228	probable protein k probable transcrip
45			676	21	E96725	hypothetical prote
					ALIGNMENTS	
RESULT 1					·	
amoebapore A N;Alternate	A pre	A precursor - Entamoeba hist names: pore-forming protein	- Entamoeba -forming pro	90	ba histolytica protein	
C;Date: 22-Nov-1993 #sequen C;Accession: S25283; A41279	?-Nov-1	993 #se	sequence_revision A41279	'r	vision 09-Mar-1996 #text	xt_change 18-Jun-1999
R;Leippe, M.; Tannich, EMBO J. 11, 3501~3506,	M.; Te	nnich,	E.; Nickel, 1992	ξ, e	R.; van der Goot,	G.; Pattus, F.; Horstmann, R.D.
A;Title: Primary and s A;Reference number: S2 A;Accession: S25283 A;Aclecule type: DNA A;Residues: 1-98 <lei></lei>	orimary be numb on: S25 bype: fype:	and seper: S25 283 DNA LATI>	and secondary er: S25283; MU 283 DNA <lei></lei>	dir.	ry structure of the pore-forming MUID:93010939; PMID:1396552	orming peptide of pathogenic E 2
A; Cross-references: A; Note: parts of th R; Leippe, M; Ebel, Proc. Natl. Acad. S A; Title: Pore-formi A; Reference number: A. Accession: A41736	rts of M.; Et M.; Et . Acad ore-forenumb	this s this s el, S.; l. Sci. rming p per: A41	L:M8394 equence Schoer Schoer U.S.A. eptide 279; MU	15; abe 88 of	A;Cross-references: EMBL:M83945; NID:g158968; PIDN:AAA29111.1; PI A;Note: parts of this sequence, including the amino end of the ma R;Leippe, M.; Ebel, S.; Schoenberger, O.L.; Horstmann, R.D.; Muel Proc. Natl. Acad. Sci. U.S.A. 88, 7659-7663, 1991 A;Title: Pore-forming peptide of pathogenic Entamoeba histolytica A;Reference number: A41279; MUID:91352048; PMID:1881907	29111.1; PID:g158969 d of the mature protein, were R.D.; Mueller-Eberhard, H.J. histolytica.
	type: s: 22-2 nily: a s: anti nain: s omain: r coduct: 9-92,56	rote 'X', ebap cter nal posi moek	27-28,'X',30 27-28,'X',30 2010; saposi 1011; sequence #si 1011; repeat hor 1012; sulfide bon	soc # "	',30-41,'X',43-46 <lew> osin repeat homology #status predicted <sig> homology <sap> #status experimental <mat> bonds: #status predicted</mat></sap></sig></lew>	
Query Matc Best Local Matches	~ ~	98.4%; Similarity 100.0%; 5; Conservative	98.4 100. vative	0 00	Score 126; DB 1; Pred. No. 1.7e-11; 0; Mismatches 0;	Length 98; Indels 0; Gaps 0;
Qy 1 Db 61	GFIATI GFIATI	GFIATLCTKVLDFGIDKLIQLIEDK 	GIDKLIÇ GIDKLIÇ	71 11 11 11	EDK 25	
RESULT 2 S49144						

. . . E

۵

A;Title: Amoebapores, a family of membranolytic peptides from cytoplasmic granules of A;Reference number: \$61439; MUID:95231296; PMID:7715451
A;Accession: \$61440
A;Molecule type: DNA
A;Residues: 1-96 <LE2>

amoebapore B precursor - Entamoeba histolytica C;Species: Entamoeba histolytica C;Species: Entamoeba histolytica C;Date: 16-Feb-1995 #sequerovision 12-May-1995 #text_change 18-Jun-1999 C;Accession: S61440; S61452; S49144 R;Leippe, M.; Andrae, J.; Nickel, R.; Tannich, E.; Mueller-Eberhard, H.J. Mol. Microbiol. 14, 895-904, 1994

П O

```
C:Species: Entamoeba histolytica
C:Species: Entamoeba histolytica
C:Date: 16-Feb-1955 #sequence_revision 12-May-1995 #text_change 18-Jun-1999
C:Accession: S61439; S61453; S49145
R:Leippe, M.; Andrae, J.; Nickel n - -
                                                                                                                                                                                                                                   C:Species: Synechocystis sp.
A:Variety: PCC 6803
C:Date: 25-Apr-1997 #sequence_revision 25-Apr-1997 #text_change
C:Accession: S75321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C:Keywords: antibacterial F:1-24/comain: signal sequence *status predicted <SIG>F:1-24/comain: saposin repeat homology <SAP>F:25-101/Product: amoebapore A *status experimental <MAT>F:29-101,32-95,59-70/Disulfide bonds: *status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C:Superfamily: amoebapore; saposin repeat homology
C:Koywords: antibacterial
F:1-19/Domain: signal sequence #status predicted <SIG>
F:16-96/Domain: saposin repeat homology <SAP>
A; Residues: 1-416 < A; Cross-references: A; Note: the nucleoti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A:Title: Amoebapores, a family of membranolytic peptides A;Reference number: $61439; MUID:95231296; PMID:7715451 A;Accession: $61439 A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
S49145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: EMBL
A;Accession: S61452
A;Molecule type: protein
A;Residues: 20-63 <LEI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                 A; Reference number: A; Accession: $75321
                                                                                                                                                           A; Title: Sequence analysis of the genome of the unicellular
                                                                                                                                                                                                                   R; Kaneko,
                                                                                                                                                                                                                                                                                                                        N;Alternate names: protein sll1575
                                                                                                                                                                                                                                                                                                                                           serine/threonine-specific protein kinase s111575
                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: EMBL:X76903; NID:g509763; PIDN:CAA54225.1; PID:g509764
A;Accession: S61453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;20-96/Product: amoebapore B *status predicted <MAT>;24-96,27-90,54-65/Disulfide bonds: *status predicte
                                       Molecule type: DNA
Residues: 1-416 <KAN>
                                                                              Status: nucleic acid sequence
                                                                                                                                                                           Kaneko, T.; Sato, S.; Kotani, H.; Tanaka, A.; Asamizu, E.; Nakamura, K.; Okumura, S.; Shimpo, S.; Takeuchi, C.; Wada, T.; Watanabe, A.; Na Res. 3, 109-136, 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Superfamily: amoebapore; saposin repeat homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Molecule type: DNA
Residues: 1-101 <LE2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ppe, M.; Andrae, J.; Nickel,
Microbiol. 14, 895-904, 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        59
                                                                                                                                                                                                                                                                                                                                                                                                                                              6<u>4</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -
                                                                                                                                                                                                                                                                                                                                                                                                                                            GLVETLCTKIVSYGIDKLIEKI 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GFIATLCTKVLDFGIDKLIQLI 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ype: protein
25-69 <LEI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                      574322;
                    EMBL: D90904;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL: X76904; NID: g509761; PIDN: CAA54226.1; PID: g509762
sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            59.4%;
59.1%;
                                                                                                                      MUID:97061201;
                                                                              not shown; translation not
GB:AB001339; was submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Çī
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 87;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 76; DB 1;
Pred. No. 0.00044;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1; Lc.., 9.7e-06; 3;
                                                                                                                      PMID:8905231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               predicted
NID:g1652225;
to the EMBL Da
                                                                                                                                                                                                                                                                                                                                           (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 96;
EMBL Data
                                                                                                                                                                                                                                                                                                                                           2.7.1.-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from
                                                                              shown
  PIDN:BAA17235.1; PID:d101796
ata Library, June 1996
                                                                                                                                                           cyanobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cytoplasmic granules
Library, June
                                                                                                                                                                                                                                                            08-Oct-1999
                                                                                                                                                                                                                                                                                                                                           Synechocystis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                  Yamada,
                                                                                                                                                                                                Y.; Miyajima, N.
Yamada, M.; Yasud
                                                                                                                                                           Synechocystis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                           sp.
                                                                                                                                                                                                  Yasud
                                                                                                                                                                                                                                                                                                                                           (stra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ö,
```

```
A;Gene: 51
C;Superfamil
C;Keywords:
                                                                                                                                                                                                                                                                                                                         gene 51 protein - human herpesvirus 3
C;Species: human herpesvirus 3, varicella-zoster virus
C;Date: 30-Sep-1988 #sequence_revision 30-Sep-1988 #text_change 16-Jul-1999
C;Accession: G27344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein kinase homolog F13C5.120 - Arabidopsis thaliana (;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 23-Apr-1999 **sequence_revision 23-Apr-1999 **text_char C;Accession: T05032 R;Bevan, M.; Pohl, T.; Weizenegger, T.; Bancroft, I.; Newes,
밁
                            Ş
                                                                                                                                                                           A;Cross-references: EMBL:X04370; C;Genetics:
                                                                                                                                                                                                                                          A;Title: The complete DNA sequence of varicella-zoster virus A;Reference number: A27345; MUID:86306657; PMID:3018124 A;Accession: G27344
                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Introns: 94/3;
A; Note: F13C5.120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Start codon: GTG
C;Keywords: phosphotransferase;
                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-835 <DAV>
                                                                                                                                                                                                                                                                                         R; Davison, A.J.; So
J. Gen. Virol. 67,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Map position: 4
A; Introns: 94/3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Experimental source: cultivar C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Residues: 1-421 <BEV>
A; Cross-references: EMBL: AL021711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Reference number: Z15395
A; Accession: T05032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             submitted to the Protein Sequence Database,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                          WZBE51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
                                                                                                                                          Superfamily:
                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
225
                                                                                                                                                                                                                                                                                                                                                                                                                                                          258 KVADFGVSKLVTVKEDK 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62 KILDFGIAKLVQAAEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                              1 GFIATLCTKVLDFGIDKLIQLIE 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9 KVLDFGIDKLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9 KVLDFGIDKLIQLIED 24
GFSGRTCTILRDMGIDTLVRVIK 247
                                                                                                                              DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                           Similarity
                                                                                                                                             varicella-zoster virus gene 51 protein
                                                                                                                              binding
                                                                                                                                                                                                                                                                                          Scott, J.E.
7, 1759-1816, 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 119/3; 151/3; 180/2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                              Conservative
                                                                           41.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    42.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          42.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Columbia; BAC clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        serine/threonine-specific protein
                                                                                                                                                                                          NID: 959989; PIDN: CAA27933.1; PID: 960039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3
                                                                           Score 53;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 54;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 220/3;
                                                                          NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           February
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DΒ
3.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 247/2;
                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                                          Length 835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #text_change 11-Jun-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 283/1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 416;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F13C5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   311/3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              H.W.; Mayer, K.F.X.; Sch
                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           kinase
                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

probable iron-sulfur protein MTH140 [similarity]
C:Species: Methanobacterium thermoautotrophicum

Methanobacterium

thermoautotrophic

D69053

```
A:Start codon: TTG
C:Superfamily: conserved hypothetical iron-sulfur protein HP0138;
C:Superfamily: conserved hypothetical iron-sulfur protein
C:Keywords: 4Fe-45; iron-sulfur protein; metalloprotein
F:287-363/Domain: ferredoxin 2[4Fe-45] homology <FER>
F:287-363/Domain: ferredoxin 2[4Fe-45] homology <FER>
F:294,297,300,355/Binding site: 4Fe-45 cluster (Cys) (covalent) #3
F:304,345,348,351/Binding site: 4Fe-45 cluster (Cys) (covalent) #3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 K1, S.; Church, G.M.; Daniels, C.J.; Mao, J.; Rice, P.; Noelling, J.; Reeve, J.N. Bacteriol. 179, 7135-7155, 1997

A;Title: Complete genome sequence of Methanobacterium thermoautotrophicum Delta A;Reference number: A69000; MUID:98037514; PMID:9371463
A;Accession: D69053
                                                                                                                          protein-tyrosine kinase (EC 2.7.1.112) YK1 - rat (fragment)
C;Species: Rattus norvegicus (Norway rat)
C;Date: 31-Dec-1991 #sequence_revision 31-Dec-1991 #text_change 19-Oct-1995
C;Accession: PT0196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Irigu Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata DNA Res. 8, 205-213, 2001
A;Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium A;Reference number: AB1807; MUID:21595285; PMID:11759840
A;Accession: AF2370
A; Title: Novel putative protein kinase clones from a rat large A; Reference number: PT0196; MUID:91287726; PMID:2062320 A; Accession: PT0196
                                                                                                                                                                                                                              RESULT
PT0196
                                                                                                                                                                                                                                                                                                                                                                                Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-520 <KUR>
A; Cross-references: GB:BA000019; PIDN:BAB76217.1;
A; Experimental source: strain PCC 7120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Note: Nostoc sp. strain PCC 7120 is a synonym of Anabaena sp. strain PCC C;Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 30-Jun-2002 C;Accession: AF2370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Species: Nostoc sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Gene: MTH140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GB:AE000803; GB:AE000666; NID:g2621179; PIDN:AAB84646.1; PID:g26211:
A;Experimental source: strain Delta H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Status: preliminary; nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             serine/threonine kinase [imported] - Nostoc sp. (strain PCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Residues: 1-396 <MTH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Smith, D.R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;Smith, D.R.; Doucette-Stamm, L.A.; Deloughery, C.; Lee, H.; Dubois, J.; Aldredge, T. Qiu, D.; Spadafora, R.; Vicaire, R.; Wang, Y.; Wierzbowski, J.; Gibson, R.; Jiwani, S.; Church, G.M.; Daniels, C.J.; Mao, J.; Rice, P.; Noelling, J.; Reeve, J.N.
                                                                                                      ;Yue,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                         Immunol. 28, 399-408, 1991
                                                                                                                                                                                                                                                                                                                                 168 KVLDFGIAKLLQSNSDQ 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           207 LSLMDTHIMVFGVDKLVPQIED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 21-Jul-2000 sion: D69053
                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3 IATLCTKVLDFGIDKLIQLIED
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ocal Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     al14518
                                                                                                                                                                                                                                                                                                                                                                                KVLDFGIDKLIQLIEDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              40.6%;
40.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          39.8%;
64.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24
                                                                                                                                                                                                                                                                                                                                                                                                                               Score 51; DB Pred. No. 12; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 51;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 52; DB 1;
Pred. No. 6.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            not shown; translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PID:g17133654;
                                                                                                                                                                                                                                                                                                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 396;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 520;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                               granular lymphocyte tumor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #status
                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GSPDB:GN00179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ferredoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yasuda, M.; Tabata,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          predicted predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2[4Fe-4S]
                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Iriguch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           func
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ч
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 z :.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A40092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
```

```
F;233-491/Domain: protein kinase homology <KIN> F;241-249/Region: protein kinase ATP-binding motif F;2/Modified site: myristylated amino end (Gly) (in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-213 <5T0>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R:Nierman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.; Heidelberg, B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft, D.H.; Ko n. J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Fraser, C Proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001
A;Title: Complete Genome Sequence of Caulobacter crescentus. A;Reference number: A87249; NUID:21173698; PMID:11259647
A;Accession: F87669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           conserved hypothetical protein CC3392 [imported] - Caulobacter crescentus C;Species: Caulobacter crescentus C;Species: Caulobacter crescentus C;Date: 20-Apr-2001 #sequence_revision 20-Apr-2001 #text_change 20-Apr-2001 C;Accession: F87669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A:Experimental source: lymphocyte cell line C:Superfamily: protein-tyrosine kinase src; protein kinase homology: C:Keywords: ATP: phosphotransferase; tyrosine-specific protein kinase F:1-56/Domain: protein kinase homology (fragment) <KIN>
  F;2/Modified site: F;263/Active site:
                                                                                            C;Superfamily: protein-tyrosine kinase src; protein kinase homology; SH2 homology; C;Keywords: ATP; autophosphorylation; blocked amino end; lipoprotein; myristylation F;59-107/Domain: SH3 homology <SH3> F;118-214/Domain: SH2 homology <SH3> F;118-214/Domain: SH2 homology <SH2>
                                                                                                                                                                                            A; Map position: 14:28.0
                                                                                                                                                                                                                     A; Cross-references: MGI:88169
                                                                                                                                                                                                                                                 A; Gene: MGI:Blk
                                                                                                                                                                                                                                                                                           A; Cross-references: GB:M30903;
                                                                                                                                                                                                                                                                                                                                           A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                    A; Accession: A40092
                                                                                                                                                                                                                                                                                                                                                                                        A; Title: Specific expression of a tyrosine kinase gene, A; Reference number: A40092; MUID:90117147; PMID:2404338
                                                                                                                                                                                                                                                                                                                                                                                                                                        R;Dymecki, S.M.; Niederhuber, J.E.; Desiderio, Science 247, 332-336, 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein-tyrosine kinase (EC 2.7.1.112) blk [validated] - mouse
C;Species: Mus musculus (house mouse)
C;Date: 16-Jun-2000 #sequence_revision 16-Jun-2000 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: mRNA
A; Residues: 1-56 < YUE>
                                                                                                                                                                                                                                                                                                                    A; Residues: 1-499 < DYM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11 TLCCKIADFGLARII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CC3392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GFIATLCTKVLDFGIDKLIQLIEDK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5 TLCTKVLDFGIDKLI 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GFSASTTIKRSDFGVSKYIPMVGDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
myristylated amino end
Lys #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GB:AE005673;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #sequence_revision 16-Jun-2000 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  39.1%;
40.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           39.1%;
53.3%;
                                                                                                                                                                                                                                                                                           NID: 9202076;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NID:g13425100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 50;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 50;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       σ
                                                                                                                                                                                                                                                                                           PIDN: AAA40453.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
5.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dв 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S.V.
                         (in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PIDN:AAK25354.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 56;
                           mature
                                                                                                                                                                                                                                                                                                                                                                                                                 blk,
                           form) #status
                                                                                                                                                                                                                                                                                         PID: 9202077
                                                                                                                                                                                                                                                                                                                                                                                                                 ij
                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GSPDB:GN00148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                 lymphoid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SH2
                                                                                                                                            myristylation;
                         predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               homology;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

39.18;

Score 50;

ВВ

1.

Length 499;

Pred. No. 16;

```
A; Molecule type: mRNA
A; Residues: 52-507 cSTR>
A; Residues: 52-507 cSTR>
A; Residues: 52-507 cSTR>
A; Cross-references: GB: J03579; NID: g212712; PIDN: AAA49081.1; PID: g212713
A; Cross-references: GB: J03579; NID: g212712; PIDN: AAA49081.1; PID: g212713
C; Superfamily: protein-tyrosine kinase src; protein kinase homology; SH2 homology; SH3 hC; Superfamily: protein-tyrosine kinase src; protein kinase homology; SH2 homology; SH3 homology; SH3 homology <SH3>
F; 66-114/Domain: SH3 homology <SH3>
F; 66-114/Domain: SH3 homology <SH3>
                                                                                                                                                                                                                                                                                                                                R;Strebhardt, K.; Mullins, J.I.; Bruck, C.; Ruebsamen-Waigmann, Proc. Natl. Acad. Sci. U.S.A. 84, 8778-8782, 1987 A;Title: Additional member of the protein-tyrosine kinase famil A;Reference number: A3939; MUID:88097370; PMID:3321053 A;Accession: A3939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N;Alternate names: kinase-related transforming protein (tkl); T-cell surface C;Species: Gallus gallus (chicken) C;Date: 16-Jun-2000 #sequence_revision 16-Jun-2000 #text_change 16-Jun-2000 C;Accession: A42126; A39939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
A; Residues: 1-309 <CZI>
A; Cross-references: EMBL: Z75200; NID:g1420647; PID:e252132; PID:g1420648; GSPDB:GN00015;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Cziepluch, C.; Jauniaux, J.C.; Kordes, E.; Poirey, R.; Pujol, A.; Tobiasch, submitted to the Protein Sequence Database, July 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C; Accession: S67196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         probable membrane protein YOR292c - yeast (Saccharomyces cerevisiae)
N;Alternate names: hypothetical protein O5608
C;Species: Saccharomyces cerevisiae
C;Species: Saccharomyces cerevisiae
C;Date: 12-Jul 1996 #sequence_revision 12-Jul 1996 #text_change 19-Apr 2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mol. Cell. Biol. 12, 1226-1233, 1992
A;Title: tkl is the avian homolog of the mammalian lck tyrosine protein kinase A;Reference number: A42126; MUID:92186854; PMID:1545804
A;Accession: A42126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R; Chow,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  F;92-108/Domain: transmembrane #status predicted <TM2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Map position: 15R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Genetics:
A;Gene: MIPS:YOR292c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Reference number: S67194
A;Accession: S67196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Experimental source: thymus, spleen
A;Note: sequence extracted from NCBI backbone (NCBIN:88831, NCBIP:88833)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Molecule type: mRNA
A;Residues: 1-88 <CHO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein-tyrosine kinase (EC 2.7.1.112) tkl [similarity] - chicken
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: GB:M85043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Experimental source: strain S288C
241-499/Domain: protein kinase homology <KIN>
249-257/Region: protein kinase ATP-binding motif
2/49-257/Region: protein kinase ATP-binding motif
2/Modified site: myristylated amino end (Gly) (in mature form) #status predicted
392,503/Binding site: phosphate (Tyr) (covalent) (by autophosphorylation) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Keywords: transmembrane protein;S3-69/Domain: transmembrane #status predicted <TMl>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 53.1
Matches 8; Conservative
                                                                                                                                125-222/Domain: SH2 homology <SH2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                365 TLCCKIADFGLARII 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          L.M.; Ratcliffe, M.J.; Veillette, A.
11. Biol. 12, 1226-1233, 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4 ATLCTKVLDFGIDKLI 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TLCTKVLDFGIDKLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SGD:S0005818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             38,3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          53.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
``
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 49; DB
Pred. No. 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              υ
•
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 309;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                family:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                the src-and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         antigen ass
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        E
                                                                                                                                                                                                                                                                                                                                                                                                lck-relate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene.
         pred
```

```
RESULT 15
A99939
                                                                                                                                                                                                                                                               R:Kuroda, M.; Ohta, T.; Uchiyama, I.; Baba, T.; Yuzawa, H.; Kobayashi, I.; Cuima, A.; Mizutani-Ui, Y.; Kobayashi, N.; Sawano, T.; Inoue, R.; Kalto, C.; Seki C.; Shiba, T.; Hattori, M.; Ogasawara, N.; Hayashi, H.; Hiramatsu, K. Lancet 357, 1225-1240, 2001

A;Title: Whole genome sequencing of meticillin-resistant Stapylococcus aureus. A;Reference number: A89758; MUID:21311952; PMID:11418146

A;Accession: A99939
                                                                                                                                                                                                                                                                                                                                                                                                A;Title: Genomic sequence comparison of two unrelated isolates of the human gastric A;Reference number: A71800; MUID:99120557; PMID:9923682 A;Accession: H71983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Accession: H71983
R;Alm, R.A.; Ling, L.S.L.; Moir, D.T.; King, B.L.; Brown, E.D.; Ives, C.; Gibson, R.; Merberg, D.; Mills, S.D.; Jiang, O.; Tay Nature 397, 176-180, 1999
á
                                                                                                             A; Gene: gltT
C; Superfamily: C4-dicarboxylate carrier protein
                                                                                                                                                                   A;Cross-references: GB:BA000018; PID:g13702333; PIDN:BAB43474.1; GSPDB:GN00149 A;Experimental source: strain N315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA primase - Helicobacter pylori (strain J99)
C;Species: Helicobacter pylori
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QY
                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-425 < KUR>
                                                                                                                                                                                                                                             A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; Superfamily: DNA primase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Experimental source: strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GB:AE001441; GB:AE001439; NID:g4154511; PIDN:AAD05592.1; PID:g415
A;Experimental source: strain J99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: DNA
A; Residues: 1-559 <ARN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Variety: strain J99
C;Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 08-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                      Matches
                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    149 LCTNKIDYGIENKGLNKDKLIEL 171
                                                          Local
                                                                                                                              9)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         σ
1 GFIATLCTKVLDFGIDKLTQLIE 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LCTKVLDFGI-----DKLIQL 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LCCKIADFGLARLIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LCTKVLDFGIDKLIQ 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            l Similarity
11; Conser
                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              37.9%;
                                                      37.5%;
34.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               38.3%;
                                     6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 49; DB
Pred. No. 23;
                                                        Score 48; DB Pred. No. 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 48.5;
Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                          2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>ب</u>
                                      9;
                                                                        Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 559;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Taylor, D.E.; Vovis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Doig, P.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7;
                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                      Gaps
                                                                                                                                                                                                                                                                                                                                                              ; Cui, L.;
Sekimizu,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Smith, D.
                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>س</u>ز
۰۰
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G.F
                                                                                                                                                                                                                                                                                                                                                                                                                                                          23
```

Search completed: Мау 9 2003, 16:18:48 а

208

GVFAFICTTIITFGASALLPLLK 230

Job time : 18.9412 secs

THIS PAGE BLANK (VEFTO)